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Employment

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1 Sept 2019 → present

Publications

Novel diamagnetic garnet-type substrate single crystals for yttrium iron garnet $Y_3Fe_5O_{12}$ films with ultralow-damping at cryogenic temperatures
Guguschev, C. (Corresponding author), Dubs, C., Blukis, R., Surzhenko, O., Brützam, M., Koc, R., Rhode, C., Berger, K., Richter, C., Berryman, C., Serha, R. O. & Chumak, A. V., Dec 2026, In: Materials Today Chemistry. 58, 11 p., 104092.

Perspectives on inverse design for AI magnonics
Vilsmeier, F. (Corresponding author), Bruckner, F., Abert, C., Suess, D. & Chumak, A. V., 29 Oct 2026, In: Journal of Physics D: Applied Physics. 59, 43, 15 p., 432001.

Bulk-mediated reflection of chirality-protected surface spin waves
Vasyuchka, V. I., Ciubotaru, F., Chumak, A. V., Hillebrands, B. & Serga, A. A., 21 Oct 2026, In: Physical Review Letters. 137, 7 p., 176701.

Exchange-mediated directional coupling of short-wavelength spin waves
Zhu, Z., Verba, R., Pirro, P., Chumak, A. V. & Wang, Q., 30 Sept 2026, arXiv.

Exchange spin-wave propagation in gallium-substituted yttrium iron garnet nanowaveguides
Voronov, A. A. (Corresponding author), Levchenko, K. O., Verba, R., Davídková, K., Dubs, C., Urbánek, M., Wang, Q., Suess, D., Abert, C. & Chumak, A. V., Jul 2026, In: Physical Review Applied. 26, 1, 8 p., 014103.

The Advancement of Brillouin Light Scattering with the Assistance of Nanoplasmonic Structures. Enhancement and Amplification
Bortchagovsky, E., Chumak, A. V. (Corresponding author) & Lozovski, V. (Corresponding author), Jul 2026, In: Plasmonics. 21, p. 3147–3159 13 p.

Brillouin Light Scattering Spectroscopy of Propagating Magnons at Sub-Kelvin Temperatures
Schmoll, D., Kuznetsov, N., Rehberger, P., Vilsmeier, F., Verba, R., Slobodianiuk, D., Serha, R. O., Levchenko, K. O., van Dijken, S., Chumak, A. V. & Knauer, S., 24 Jun 2026, arXiv.

Integrated magnonic neural circuits based on nonlinear wave neurons
Guo, M., Jing, X., Davidkova, K., Verba, R., Zhou, Z., Guo, X., Dubs, C., Gao, C., Rao, Y., Cai, K., Li, J., Pirro, P., Chumak, A. V. & Wang, Q., 10 Jun 2026, arXiv.

k-Selective Electrical-to-Magnon Transduction with Finite-Element-Resolved Sub-Micron Nanoantennas
Höfinger, A. (Corresponding author), Voronov, A. A., Schmoll, D., Koraltan, S., Bruckner, F., Abert, C., Suess, D., Lindner, M., Reimann, T., Dubs, C., Chumak, A. V. (Corresponding author) & Knauer, S. (Corresponding author), Jun 2026, In: Advanced Physics Research. 5, 6, 9 p., e00211.

Ultrafast formation of a large dynamic magnetic soliton
Wojewoda, O., Mayr, S., Gross, M. J., Klíma, J., Panda, J., Krčma, J., Holobrádek, J., Davídková, K., Chumak, A. V., Gerasimchuk, I., Verba, R., Pirro, P., Weigand, M., Finizio, S., Lindner, M., Dubs, C., Wang, Q., Wintz, S., Ross, C. A. & Urbánek, M., 30 May 2026, arXiv.

Review on spin-wave RF applications
Levchenko, K. (Corresponding author), Davídková, K., Mikkelsen, J. & Chumak, A. (Corresponding author), 1 May 2026, In: IEEE Transactions on Magnetics. 62, 5, 40 p., 0900140.

Ultralong-living magnons in the quantum limit
Serha, R. O. (Corresponding author), Mcallister, K. H., Majcen, F., Knauer, S., Reimann, T., Dubs, C., Melkov, G. A., Serga, A. A., Tyberkevych, V. S., Chumak, A. V. (Corresponding author) & Bozhko, D. A. (Corresponding author), May 2026, In: Science Advances. 12, 18, 9 p., eaee2344.

True random number generation through stochastic magnonic bistability
Guo, M., Zhou, Z., Slobodianiuk, D., Verba, R., Davídková, K., Guo, X., Jing, X., Wang, Y., Heinz, B., Rao, Y., Dubs, C., Wan, C., Han, X., Chumak, A. V., Pirro, P. & Wang, Q., 21 Apr 2026, arXiv.

The ideal substrate for yttrium iron garnet films in quantum magnonics
Serha, R. O. (Corresponding author), Dubs, C., Guguschev, C., Aichner, B., Schmoll, D., Schäfer, J., Panda, J., Weiler, M., Pirro, P., Urbánek, M. & Chumak, A. V. (Corresponding author), 30 Mar 2026, In: Communications Materials. 7, 1, 7 p. , 134.

Quantum State Preparation of Ferromagnetic Magnons by Parametric Driving
Mycroft, M. E., Serha, R., Chumak, A. & Gonzalez-Ballestero, C., 21 Jan 2026, arXiv, 6 p.

Magnetic materials for quantum magnonics
Serha, R. (Corresponding author), Dubs, C. & Chumak, A., 2026, In: APL Materials . 14, 3, 14 p., 030901.

NeuralMag: an open-source nodal finite-difference code for inverse micromagnetics
Abert, C. (Corresponding author), Bruckner, F., Voronov, A., Lang, M., Pathak, S. A., Holt, S., Kraft, R., Allayarov, R., Flauger, P., Koraltan, S., Schrefl, T., Chumak, A., Fangohr, H. & Suess, D., Dec 2025, In: npj Computational Materials. 11 , 1, 10 p., 193.

Unified theory of magnetization temperature dependence in ferrimagnets
Serha, R., Pomyalov, A., Chumak, A. & L'vov, V. S., 21 Nov 2025, In: Physical Review B. 112, 17, 17 p., 174427.

Long-range propagating paramagnon-polaritons in organic free radicals
Knauer, S., Verba, R., Serha, R. O., Slobodianiuk, D., Schmoll, D., Ney, A., Demokritov, S. & Chumak, A., 13 Nov 2025, (Submitted).

1D YIG hole-based magnonic nanocrystal
Levchenko, K. O. (Corresponding author), Davídková, K., Serha, R. O., Moalic, M., Voronov, A. A., Dubs, C., Surzhenko, O., Lindner, M., Panda, J., Wang, Q., Wojewoda, O., Heinz, B., Urbánek, M., Krawczyk, M. & Chumak, A. V., 23 Oct 2025 , In: Applied Physics Letters. 127, 17, 172401.

Spin-wave microscale RF delay lines for mid- and high-frequency 5G band
Davídková, K. (Corresponding author), Levchenko, K., Serha, R., Bruckner, F., Morris, L., Dubs, C., Urbánek, M., Suess, D., Wang, Q., Verba, R. & Chumak, A., 14 Oct 2025, In: Journal of Applied Physics. 138, 14, 13 p., 143908.

Deeply Nonlinear Magnonic Directional Coupler
Ge, X., Verba, R., Pirro, P., Chumak, A. V. & Wang, Q. (Corresponding author), 10 Sept 2025, In: Nano Letters. 25, 36, p. 13490–13495 6 p.

Novel diamagnetic garnet-type substrate single crystals for ultralow-damping yttrium iron garnet Y3Fe5O12 films at cryogenic temperatures
Guguschev, C., Dubs, C., Blukis, R., Surzhenko, O., Brützam, M., Koc, R., Rhode, C., Berger, K., Richter, C., Berryman, C., Serha, R. O. & Chumak, A. V., 25 Aug 2025, arXiv.

Micromagnetic simulation and optimization of spin-wave transducers
Bruckner, F. (Corresponding author), Davídková, K., Abert, C., Chumak, A. & Suess, D., 6 Jun 2025, In: Scientific Reports. 15, 1, 8 p., 19993.

Elimination of substrate-induced ferromagnetic resonance linewidth broadening in the epitaxial system YIG–GGG by microstructuring
Schmoll, D. (Corresponding author), Serha, R., Panda, J., Voronov, A., Dubs, C., Urbánek, M. & Chumak, A., 1 Jun 2025, In: Low Temperature Physics. 51, 6, p. 724–730 7 p.

Realization of inverse-design magnonic logic gates
Zenbaa, N. (Corresponding author), Majcen, F., Abert, C., Bruckner, F., Mauser, N. J., Schrefl, T., Wang, Q., Suess, D. & Chumak, A. V. (Corresponding author), 23 May 2025, In: Science Advances. 11, 21, 9 p., eadu9032.

Inverse-design topology optimization of magnonic devices using level-set method
Voronov, A. (Corresponding author), Cuervo Santos, M., Bruckner, F., Suess, D., Chumak, A. & Abert, C. (Corresponding author), 21 May 2025, In: npj Spintronics. 3, 1, 8 p., 19.

Wavenumber-dependent magnetic losses in yttrium iron garnet–gadolinium gallium garnet heterostructures at millikelvin temperatures
Schmoll, D. (Corresponding author), Voronov, A., Serha, R., Slobodianiuk, D., Levchenko, K., Abert, C., Knauer, S., Suess, D., Verba, R. & Chumak, A., 17 Apr 2025, In: Physical Review B. 111, 11 p., 134428.

Damping enhancement in YIG at millikelvin temperatures due to GGG substrate
Serha, R. O., Voronov, A. A., Schmoll, D., Klingbeil, R., Knauer, S., Koraltan, S., Pribytova, E., Lindner, M., Reimann, T., Dubs, C., Abert, C., Verba, R., Urbánek, M., Suess, D. & Chumak, A. V. (Corresponding author), Mar 2025, In: Materials Today Quantum. 5, 100025.

Nanoscale spin-wave frequency-selective limiter for 5G technology
Davídková, K. (Corresponding author), Levchenko, K., Bruckner, F., Verba, R., Majcen, F., Wang, Q., Lindner, M., Dubs, C., Vlaminck, V., Klima, J., Urbánek, M., Suess, D. & Chumak, A. (Corresponding author), Mar 2025, In: Physical Review Applied. 23, 3, 14 p., 034026.

A universal inverse-design magnonic device
Zenbaa, N., Abert, C., Majcen, F., Kerber, M., Serha, R. O., Knauer, S., Wang, Q., Schrefl, T., Suess, D. & Chumak, A. V. (Corresponding author), Feb 2025, In: Nature Electronics. 8, p. 106-115 10 p.

Plasmon-enhanced Brillouin light scattering spectroscopy for magnetic systems. II. Numerical simulations
Demydenko, Y., Vasiliev, T., Levchenko, K. O., Chumak, A. V. & Lozovski, V. (Corresponding author), 7 Jan 2025, In: Physical Review B. 111, 1, 13 p., 014405.

Fast switchable unidirectional forward volume spin-wave emitter
Wang, Y., Guo, M., Davídková, K., Verba, R., Guo, X., Dubs, C., Chumak, A. V., Pirro, P. & Wang, Q. (Corresponding author), Jan 2025, In: Physical Review Applied. 23, 1, 10 p., 014066.

Exchange spin-wave propagationn in Ga:YIG nanowaveguides
Voronov, A. (Corresponding author), Levchenko, K., Verba, R., Davídková, K., Dubs, C., Urbánek, M., Wang, Q., Suess, D., Abert, C. & Chumak, A., 2025, (Submitted) arXiv.

YIG/CoFeB bilayer magnonic isolator
Zenbaa, N. (Corresponding author), Levchenko, K. O., Panda, J., Davídková, K., Ruhwedel, M., Knauer, S., Lindner, M., Dubs, C., Wang, Q., Urbánek, M., Pirro, P. & Chumak, A. V. (Corresponding author), 2025, In: IEEE Magnetics Letters. 16 , 5 p., 6100205 .

Plasmon-enhanced Brillouin light scattering spectroscopy for magnetic systems: Theoretical model
Lozovski, V. & Chumak, A. V., 21 Nov 2024, In: Physical Review B. 110, 18, 12 p., 184419.

Unidirectional propagation of zero-momentum magnons
Wojewoda, O. (Corresponding author), Holobrádek, J., Pavelka, D., Pribytova, E., Krčma, J., Klíma, J., Panda, J., Michalička, J., Lednický, T., Chumak, A. V. & Urbánek, M. (Corresponding author), 23 Sept 2024, In: Applied Physics Letters. 125, 13, 6 p., 132401.

All-magnonic repeater based on bistability
Wang, Q. (Corresponding author), Verba, R., Davídková, K., Heinz, B., Tian, S., Rao, Y., Guo, M., Guo, X., Dubs, C., Pirro, P. & Chumak, A. V. (Corresponding author), 31 Aug 2024, In: Nature Communications. 15, 1, 7 p., 7577.

Magnetic anisotropy and GGG substrate stray field in YIG films down to millikelvin temperatures
Serha, R. (Corresponding author), Voronov, A., Schmoll, D., Verba, R. V., Levchenko, K., Koraltan, S., Davídková, K., Budinská, B., Wang, Q., Dobrovolskiy, O., Urbánek, M., Lindner, M., Reimann, T., Dubs, C., Gonzalez-Ballestero, C., Abert, C., Suess, D., Bozhko, D. A., Knauer, S. & Chumak, A., 2 Jul 2024, In: npj Spintronics. 2, 7 p., 29.

Nanoscale magnonic networks
Wang, Q. (Corresponding author), Csaba, G., Verba, R., Chumak, A. V. & Pirro, P., Apr 2024, In: Physical Review Applied. 21, 4, 11 p., 040503.

Roadmap for unconventional computing with nanotechnology
Finocchio, G. (Corresponding author), Incorvia, J. A. C., Friedman, J. S., Yang, Q., Giordano, A., Grollier, J., Yang, H., Ciubotaru, F., Chumak, A. V., Naeemi, A. J., Cotofana, S. D., Tomasello, R., Panagopoulos, C., Carpentieri, M., Lin, P., Pan, G., Yang, J. J., Todri-Sanial, A., Boschetto, G. & Makasheva, K. & 31 others, Sangwan, V. K., Trivedi, A. R., Hersam, M. C., Camsari, K. Y., McMahon, P. L., Datta, S., Koiller, B., Aguilar, G. H., Temporão, G. P., Rodrigues, D. R. (Corresponding author), Sunada, S., Everschor-Sitte, K., Tatsumura, K., Goto, H., Puliafito, V., Åkerman, J., Takesue, H., Di Ventra, M., Pershin, Y. V., Mukhopadhyay, S., Roy, K., Wang, I. T., Kang, W., Zhu, Y., Kaushik, B. K., Hasler, J., Ganguly, S., Ghosh, A. W., Levy, W., Roychowdhury, V. & Bandyopadhyay, S. (Corresponding author), 28 Mar 2024, In: Nano Futures. 8, 59 p., 012001.

Nanoscaled magnon transistor based on stimulated three-magnon splitting
Ge, X., Verba, R., Pirro, P., Chumak, A. V. & Wang, Q. (Corresponding author), 22 Mar 2024, In: Applied Physics Letters. 124, 12, 5 p., 122413.

Filtering Device and Process for Filtering Radiofrequency Signals
Chumak, A. (Inventor), Wang, Q. (Inventor), Davídková, K. (Inventor), Koraltan, S. (Inventor), Urbánek, M. (Inventor) & Suess, D. (Inventor), 2024, (Accepted/In press) Patent No. EP23200651.0

Offset-Free Magnetic Field Sensor Based on a Standing Spin Wave
Gattringer, M. (Corresponding author), Abert, C., Wang, Q., Chumak, A. & Suess, D., 31 Oct 2023, In: Physical Review Applied. 20, 4, 13 p., 044083.

Stimulated Amplification of Propagating Spin Waves
Breitbach, D. (Corresponding author), Schneider, M., Heinz, B., Kohl, F., Maskill, J., Scheuer, L., Serha, R. O., Brächer, T., Lägel, B., Dubs, C., Tiberkevich, V. S., Slavin, A. N., Serga, A. A., Hillebrands, B., Chumak, A. V. & Pirro, P., 13 Oct 2023, In: Physical Review Letters. 131, 15, 7 p., 156701.

Deeply nonlinear excitation of self-normalized short spin waves
Wang, Q. (Corresponding author), Verba, R., Heinz, B., Schneider, M., Wojewoda, O., Davídková, K., Levchenko, K., Dubs, C., Mauser, N., Urbánek, M., Pirro, P. & Chumak, A., 11 Aug 2023, In: Science Advances. 9, 32, 9 p., eadg4609.

Numerical model for 32-bit magnonic ripple carry adder
Garlando, U., Wang, Q., Dobrovolskiy, O., Chumak, A. & Riente, F. (Corresponding author), Jul 2023, In: IEEE Transactions on Emerging Topics in Computing. 11, 3, p. 679-688 10 p.

Generation of Spin-Wave Pulses by Inverse Design
Casulleras, S. (Corresponding author), Knauer, S., Wang, Q., Romero-Isart, O., Chumak, A. V. & Gonzalez-Ballestero, C. (Corresponding author), 30 Jun 2023, In: Physical Review Applied. 19, 6, 10 p., 064085.

Propagating Spin-Wave Spectroscopy at Millikelvin Temperatures Using Arbitrary Magnetisation Orientations
Knauer, S., Peinhaupt, S., Davídková, K., Schmoll, D., Serha, R. O., Voronov, A. A., Wang, Q., Lindner, M., Reimann, T., Dubs, C., Urbanek, M. & Chumak, A. V., May 2023, *2023 IEEE International Magnetic Conference - Short Papers, INTERMAG Short Papers 2023 - Proceedings.* Sendai: IEEE, 2 p. 10305053

Propagating spin-wave spectroscopy in a liquid-phase epitaxial nanometer-thick YIG film at millikelvin temperatures
Knauer, S. (Corresponding author), Davídková, K., Schmoll, D., Serha, R. O., Voronov, A., Wang, Q., Verba, R., Dobrovolskiy, O. V., Lindner, M., Reimann, T., Dubs, C., Urbánek, M. & Chumak, A. V., 14 Apr 2023, In: Journal of Applied Physics. 133, 14, 8 p., 143905.

Vortex Counting and Velocimetry for Slitted Superconducting Thin Strips
Bevz, V. M., Mikhailov, M. Y., Budinská, B., Lamb-Camarena, S., Shpilinska, S. O., Chumak, A. V., Urbánek, M., Arndt, M. , Lang, W. & Dobrovolskiy, O. V. (Corresponding author), 30 Mar 2023, In: Physical Review Applied. 19, 3, 11 p., 034098.

YouTube Lecture Course on Magnonics
Chumak, A., 2023

Micromagnetically integrated numerical model of spin pumping based on spin diffusion
Gattringer, M. (Corresponding author), Abert, C., Bruckner, F., Chumak, A. & Suess, D., 18 Jul 2022, In: Physical Review B. 106, 2, 7 p., 024417.

Advances in Magnetics Roadmap on Spin-Wave Computing
Chumak, A. V. (Corresponding author), Kabos, P., Wu, M., Abert, C., Adelmann, C., Adeyeye, A. O., Åkerman, J., Aliev, F. G., Anane, A., Awad, A., Back, C. H., Barman, A., Bauer, G. E. W., Becherer, M., Beginin, E. N., Bittencourt, V. A. S. V., Blanter, Y. M., Bortolotti, P., Boventer, I. & Bozhko, D. A. & 96 others, Bunyaev, S. A., Carmiggelt, J. J., Cheenikundil, R. R., Ciubotaru, F., Cotofana, S., Csaba, G., Dobrovolskiy, O. V., Dubs, C., Elyasi, M., Fripp, K. G., Fulara, H., Golovchanskiy, I. A., Gonzalez-Ballestero, C., Graczyk, P., Grundler, D., Gruszecki, P., Gubbiotti, G., Guslienko, K., Haldar, A., Hamdioui, S., Hertel, R., Hillebrands, B., Hioki, T., Houshang, A., Hu, C.-M., Huebl, H., Huth, M., Iacocca, E., Jungfleisch, M. B., Kakazei, G. N., Khitun, A., Khymyn, R., Kikkawa, T., Kläui, M., Klein, O., Kłos, J. W., Knauer, S., Koraltan, S., Kostylev, M., Krawczyk, M., Krivorotov, I. N., Kruglyak, V. V., Lachance-Quirion, D., Ladak, S., Lebrun, R., Li, Y., Lindner, M., Macêdo, R., Mayr, S., Melkov, G. A., Mieszczak, S., Nakamura, Y., Nembach, H. T., Nikitin, A. A., Nikitov, S. A., Novosad, V., Otálora, J. A., Otani, Y., Papp, A., Pigeau, B., Pirro, P., Porod, W., Porrati, F., Qin, H., Rana, B., Reimann, T., Riente, F., Romero-Isart, O., Ross, A., Sadovnikov, A. V., Safin, A. R., Saitoh, E., Schmidt, G., Schultheiss, H., Schultheiss, K., Serga, A. A., Sharma, S., Shaw, J. M., Suess, D., Surzhenko, O., Szulc, K., Taniguchi, T., Urbánek, M., Usami, K., Ustinov, A. B., van der Sar, T., van Dijken, S., Vasyuchka, V. I., Verba, R., Kusminskiy, S. V., Wang, Q., Weides, M., Weiler, M., Wintz, S., Wolski, S. P. & Zhang, X., Jun 2022, In: IEEE Transactions on Magnetics. 58, 6, p. 1-72 72 p., 0800172.

Parametric generation of spin waves in nanoscaled magnonic conduits
Heinz, B. (Corresponding author), Mohseni, M., Lentfert, A., Verba, R., Schneider, M., Lägel, B., Levchenko, K., Brächer, T., Dubs, C., Chumak, A. V. & Pirro, P., 20 Apr 2022, In: Physical Review B. 105, 14, 9 p., 144424.

Rising Speed Limits for Fluxons via Edge-Quality Improvement in Wide MoSi Thin Films
Budinská, B. (Corresponding author), Aichner, B., Vodolazov, D. Y., Mikhailov, M. Y., Porrati, F., Huth, M., Chumak, A. V., Lang, W. & Dobrovolskiy, O. V. (Corresponding author), 30 Mar 2022, In: Physical Review Applied. 17, 3, 12 p., 034072.

Fast long-wavelength exchange spin waves in partially-compensated Ga:YIG
Böttcher, T., Ruhwedel, M., Levchenko, K. O., Wang, Q., Chumak, H. L., Popov, M. A., Zavislyak, I. V., Dubs, C., Surzhenko, O., Hillebrands, B., Chumak, A. V. & Pirro, P. (Corresponding author), 7 Mar 2022, In: Applied Physics Letters. 120, 10, 5 p., 102401.

Nonreciprocal magnon fluxonics upon ferromagnet/superconductor hybrids
Dobrovolskiy, O. (Corresponding author) & Chumak, A., 1 Feb 2022, In: Journal of Magnetism and Magnetic Materials. 543, 6 p., 168633.

Merging of spin-wave modes in obliquely magnetized circular nanodots
Kharlan, J. (Corresponding author), Borynskyi, V., Bunyaev, S. A., Bondarenko, P., Salyuk, O., Golub, V., Serga, A. A., Dobrovolskiy, O. V., Chumak, A., Verba, R. (Corresponding author) & Kakazei, G. N., 5 Jan 2022, In: Physical Review B. 105, 1, 8 p., 014407.

Control of the Bose-Einstein Condensation of Magnons by the Spin Hall Effect
Schneider, M. (Corresponding author), Breitbach, D., Serha, R. O., Wang, Q., Serga, A. A., Slavin, A. N., Tiberkevich, V. S., Heinz, B., Lägel, B., Brächer, T., Dubs, C., Knauer, S., Dobrovolskiy, O., Pirro, P., Hillebrands, B. & Chumak, A., 2 Dec 2021, In: Physical Review Letters. 127, 23, 7 p., 237203.

Spin-Wave Dispersion Measurement by Variable-Gap Propagating Spin-Wave Spectroscopy
Vanatka, M. (Corresponding author), Szulc, K., Wojewoda, O., Dubs, C., Chumak, A., Krawczyk, M., Dobrovolskiy, O., Klos, J. W. & Urbanek, M., 17 Nov 2021, In: Physical Review Applied. 16, 5, 10 p., 054033.

The 2021 Magnonics Roadmap
Barman, A. (Corresponding author), Gubbiotti, G., Ladak, S., Adeyeye, A. O., Krawczyk, M., Gräfe, J., Adelmann, C., Cotofana, S., Naeemi, A., Vasyuchka, V. I., Hillebrands, B., Nikitov, S. A., Yu, H., Grundler, D., Sadovnikov, A. V., Grachev, A. A., Sheshukova, S. E., Duquesne, J. Y., Marangolo, M. & Csaba, G. & 39 others, Porod, W., Demidov, V. E., Urazhdin, S., Demokritov, S. O., Albisetti, E., Petti, D., Bertacco, R., Schultheiss, H., Kruglyak, V. V., Poimanov, V. D., Sahoo, S., Sinha, J., Yang, H., Münzenberg, M., Moriyama, T., Mizukami, S., Landeros, P., Gallardo, R. A., Carlotti, G., Kim, J. V., Stamps, R. L., Camley, R. E., Rana, B., Otani, Y., Yu, W., Yu, T., Bauer, G. E. W., Back, C., Uhrig, G. S., Dobrovolskiy, O. V., Budinska, B., Qin, H., Van Dijken, S., Chumak, A. V., Khitun, A., Nikonov, D. E., Young, I. A., Zingsem, B. W. & Winklhofer, M., 13 Oct 2021, In: Journal of Physics Condensed Matter. 33, 41, 72 p., 413001.

Stabilization of a nonlinear magnonic bullet coexisting with a Bose-Einstein condensate in a rapidly cooled magnonic system driven by spin-orbit torque
Schneider, M. (Corresponding author), Breitbach, D., Serha, R. O., Wang, Q., Mohseni, M., Serga, A. A., Slavin, A. N., Tiberkevich, V. S., Heinz, B., Brächer, T., Lägel, B., Dubs, C., Knauer, S., Dobrovolskiy, O., Pirro, P., Hillebrands, B. & Chumak, A., 11 Oct 2021, In: Physical Review B. 104, 14, 6 p., L140405.

Tension-free Dirac strings and steered magnetic charges in 3D artificial spin ice
Koraltan, S. (Corresponding author), Slanovc, F., Bruckner, F., Nisoli, C., Chumak, A. V., Dobrovolskiy, O. V., Abert, C. & Suess, D., 5 Aug 2021, In: npj Computational Materials. 7, 1, 8 p., 125.

Inverse-design magnonic devices
Wang, Q. (Corresponding author), Chumak, A. V. & Pirro, P., 11 May 2021, In: Nature Communications. 12, 1, 9 p., 2636.

Spin-wave eigenmodes in direct-write 3D nanovolcanoes
Dobrovolskiy, O. V. (Corresponding author), Vovk, N. R., Bondarenko, A. V., Bunyaev, S. A., Lamb-Camarena, S., Zenbaa, N., Sachser, R., Barth, S., Guslienko, K. Y., Chumak, A. V., Huth, M. & Kakazei, G. N., 29 Mar 2021, In: Applied Physics Letters. 118, 13, 6 p., 132405.

Controlling the nonlinear relaxation of quantized propagating magnons in nanodevices
Mohseni, M. (Corresponding author), Wang, Q., Heinz, B., Kewenig, M., Schneider, M., Kohl, F., Lägel, B., Dubs, C., Chumak, A. V. & Pirro, P., 2 Mar 2021, In: Physical Review Letters. 126, 9, 6 p., 097202.

Long-range spin-wave propagation in transversely magnetized nano-scaled conduits
Heinz, B. (Corresponding author), Wang, Q., Schneider, M., Weiß, E., Lentfert, A., Lägel, B., Brächer, T., Dubs, C., Dobrovolskiy, O. V., Pirro, P. (Corresponding author) & Chumak, A. V. (Corresponding author), Mar 2021, In: Applied Physics Letters. 118, 13, 6 p., 132406.

Engineered magnetization and exchange stiffness in direct-write Co-Fe nanoelements
Bunyaev, S. A., Budinska, B., Sachser, R., Wang, Q., Levchenko, K., Knauer, S., Bondarenko, A. V., Urbánek, M., Guslienko, K. Y., Chumak, A. V., Huth, M., Kakazei, G. N. & Dobrovolskiy, O. V. (Corresponding author), 11 Jan 2021, In: Applied Physics Letters. 118, 2, 5 p., 022408.

Temperature dependence of spin pinning and spin-wave dispersion in nanoscopic ferromagnetic waveguides
Heinz, B., Wang, Q., Verba, R., Vasyuchka, V. I., Kewenig, M., Pirro, P., Schneider, M., Meyer, T., Lägel, B., Dubs, C., Brächer, T., Dobrovolskiy, O. V. & Chumak, A. V. (Corresponding author), 18 Dec 2020, In: Ukrainian Journal of Physics. 65, 12, p. 1094-1108 15 p.

A nonlinear magnonic nano-ring resonator
Wang, Q. (Corresponding author), Hamadeh, A., Verba, R., Lomakin, V., Mohseni, M., Hillebrands, B., Chumak, A. V. & Pirro, P. (Corresponding author), 14 Dec 2020, In: npj Computational Materials. 6, 1, 7 p., 192.

Spin-wave spectroscopy of individual ferromagnetic nanodisks
Dobrovolskiy, O. V. (Corresponding author), Bunyaev, S. A., Vovk, N. R., Navas, D., Gruszecki, P., Krawczyk, M., Sachser, R., Huth, M., Chumak, A. V., Guslienko, K. Y. & Kakazei, G. N., 7 Nov 2020, In: Nanoscale. 12, 41, p. 21207-21217 11 p.

Introduction to spin wave computing
Mahmoud, A., Ciubotaru, F., Vanderveken, F., Chumak, A. V., Hamdioui, S., Adelmann, C. & Cotofana, S. (Corresponding author), 28 Oct 2020, In: Journal of Applied Physics. 128, 16, 44 p., 161101.

Opportunities and challenges for spintronics in the microelectronics industry
Dieny, B. (Corresponding author), Prejbeanu, I. L., Garello, K., Gambardella, P., Freitas, P., Lehndorff, R., Raberg, W., Ebels, U., Demokritov, S. O., Akerman, J., Deac, A., Pirro, P., Adelmann, C., Anane, A., Chumak, A. V., Hirohata, A., Mangin, S., Valenzuela, S. O., Onbaşlı, M. C. & d'Aquino, M. & 6 others, Prenat, G., Finocchio, G., Lopez-Diaz, L., Chantrell, R., Chubykalo-Fesenko, O. & Bortolotti, P. (Corresponding author), 1 Aug 2020, In: Nature Electronics. 3, 8, p. 446-459 14 p.

Ultra-fast vortex motion in a direct-write Nb-C superconductor
Dobrovolskiy, O. V. (Corresponding author), Vodolazov, D. Y., Porrati, F., Sachser, R., Bevz, V. M., Mikhailov, M. Y., Chumak, A. V. & Huth, M., 3 Jul 2020, In: Nature Communications. 11, 1, 10 p., 3291.

Propagation of Spin-Wave Packets in Individual Nanosized Yttrium Iron Garnet Magnonic Conduits
Heinz, B. (Corresponding author), Brächer, T., Schneider, M., Wang, Q., Lägel, B., Friedel, A. M., Breitbach, D., Steinert, S., Meyer, T., Kewenig, M., Dubs, C., Pirro, P. & Chumak, A. V., 10 Jun 2020, In: Nano Letters. 20, 6, p. 4220-4227 8 p.

Bose-Einstein condensation of quasiparticles by rapid cooling
Schneider, M. (Corresponding author), Brächer, T., Breitbach, D., Lauer, V., Pirro, P., Bozhko, D. A., Musiienko-Shmarova, H. Y., Heinz, B., Wang, Q., Meyer, T., Heussner, F., Keller, S., Papaioannou, E. T., Lägel, B., Löber, T., Dubs, C., Slavin, A. N., Tiberkevich, V. S., Serga, A. A. & Hillebrands, B. & 1 others, Chumak, A. (Corresponding author), 20 Apr 2020, In: Nature Nanotechnology. 15, p. 457–461 5 p.

Magnon-phonon interactions in magnon spintronics
Bozhko, D. A. (Corresponding author), Vasyuchka, V. I., Chumak, A. & Serga, A. A., Apr 2020, In: Low Temperature Physics. 46, 4, p. 383-399 17 p., 0000872.

Parametric Generation of Propagating Spin Waves in Ultrathin Yttrium Iron Garnet Waveguides
Mohseni, M. (Corresponding author), Kewenig, M., Verba, R., Wang, Q., Schneider, M., Heinz, B., Kohl, F., Dubs, C., Lägel, B., Serga, A. A., Hillebrands, B., Chumak, A. V. & Pirro, P., Apr 2020, In: Physica Status Solidi. Rapid Research Letters. 14, 4, 7 p., 2000011.

Reflection-less width-modulated magnonic crystal
Frey, P. (Corresponding author), Nikitin, A. A., Bozhko, D. A., Bunyaev, S. A., Kakazei, G. N., Ustinov, A. B., Kalinikos, B. A., Ciubotaru, F., Chumak, A. V., Wang, Q., Tiberkevich, V. S., Hillebrands, B. & Serga, A. A., 22 Jan 2020, In: Communications Physics. 3, 1, 7 p., 17.

A magnonic directional coupler for integrated magnonic half-adders
Wang, Q. (Corresponding author), Kewenig, M., Schneider, M., Verba, R., Kohl, F., Heinz, B., Geilen, M., Mohseni, M., Lägel, B., Ciubotaru, F., Adelmann, C., Dubs, C., Cotofana, S. D., Dobrovolskiy, O. V., Brächer, T., Pirro, P. & Chumak, A. V. (Corresponding author), 2020, In: Nature Electronics. 3, p. 765–774 10 p.

Nanoscale spin-wave wake-up receiver
Wang, Q. (Corresponding author), Brächer, T., Mohseni, M., Hillebrands, B., Vasyuchka, V. I., Chumak, A. V. & Pirro, P., 26 Aug 2019, In: Applied Physics Letters. 115, 9, 4 p., 092401.

Spin Pinning and Spin-Wave Dispersion in Nanoscopic Ferromagnetic Waveguides
Wang, Q., Heinz, B., Verba, R., Kewenig, M., Pirro, P., Schneider, M., Meyer, T., Lägel, B., Dubs, C., Brächer, T. & Chumak, A. (Corresponding author), 19 Jun 2019, In: Physical Review Letters. 122, 24, 6 p., 247202.

Magnon–fluxon interaction in a ferromagnet/superconductor heterostructure
Dobrovolskiy, O. V. (Corresponding author), Sachser, R., Brächer, T., Böttcher, T., Kruglyak, V. V., Vovk, R. V., Shklovskij, V. A., Huth, M., Hillebrands, B. & Chumak, A. V., 1 May 2019, In: Nature Physics. 15, 5, p. 477-482 6 p.

Recent Trends in Microwave Magnetism and Superconductivity
Prokopenko, O. (Corresponding author), Bozhko, D. A., Tyberkevych, V. S., Chumak, A., Vasyuchka, V., Serga, A. A., Dzyapko, O., Verba, R. V., Talalaevskij, A., Slobodianiuk, D., Kobljanskyj, Y. V., Moiseienko, V. A., Sholom, S. V. & Malyshev, V. Y., 2019, In: Ukrainian Journal of Physics. 64, 10, p. 888-926 39 p., 888.

Direct observation of spin diffusion enhanced nonadiabatic spin torque effects in rare-earth-doped permalloy
Krautscheid, P., Reeve, R. M., Schönke, D., Boventer, I., Conca, A., Chumak, A. V., Hillebrands, B., Ehrler, J., Osten, J., Fassbender, J. & Kläui, M. (Corresponding author), 5 Dec 2018, In: Physical Review B. 98, 21, 8 p., 214406.

Control of Spin-Wave Propagation using Magnetisation Gradients
Vogel, M. (Corresponding author), Aßmann, R., Pirro, P., Chumak, A. V., Hillebrands, B. & von Freymann, G., 1 Dec 2018 , In: Scientific Reports. 8, 1, 10 p., 11099.

Spin-wave propagation through a magnonic crystal in a thermal gradient
Langner, T., Bozhko, D. A., Bunyaev, S. A., Kakazei, G. N., Chumak, A. V., Serga, A. A., Hillebrands, B. & Vasyuchka, V. I., 30 Jul 2018, In: Journal of Physics D: Applied Physics. 51, 34, 7 p., 344002.

Reconfigurable nanoscale spin-wave directional coupler
Wang, Q., Pirro, P., Verba, R., Slavin, A., Hillebrands, B. & Chumak, A. V. (Corresponding author), Jan 2018, In: Science Advances. 4, 1, 12 p., e1701517.

Magnonics: Spin waves connecting charges, spins and photons
Chumak, A. V. & Schultheiss, H., 10 Jul 2017, In: Journal of Physics D: Applied Physics. 50, 30, 4 p., 300201.

Bottleneck Accumulation of Hybrid Magnetoelastic Bosons
Bozhko, D. A. (Corresponding author), Clausen, P., Melkov, G. A., L'Vov, V. S., Pomyalov, A., Vasyuchka, V. I., Chumak, A. V., Hillebrands, B. & Serga, A. A., 8 Jun 2017, In: Physical Review Letters. 118, 23, 6 p., 237201.

Magnonic crystals for data processing
Chumak, A. V. (Corresponding author), Serga, A. A. & Hillebrands, B., 23 May 2017, In: Journal of Physics D: Applied Physics. 50, 24, 20 p., 244001.

Voltage-controlled nanoscale reconfigurable magnonic crystal
Wang, Q. (Corresponding author), Chumak, A. V., Jin, L., Zhang, H., Hillebrands, B. & Zhong, Z. (Corresponding author), 19 Apr 2017, In: Physical Review B. 95, 13, 6 p., 134433.

Experimental prototype of a spin-wave majority gate
Fischer, T. (Corresponding author), Kewenig, M., Bozhko, D. A., Serga, A. A., Syvorotka, I. I., Ciubotaru, F., Adelmann, C., Hillebrands, B. & Chumak, A. V., 10 Apr 2017, In: Applied Physics Letters. 110, 15, 4 p., 152401.

Temporal Evolution of Auto-Oscillations in an Yttrium-Iron-Garnet/Platinum Microdisk Driven by Pulsed Spin Hall Effect-Induced Spin-Transfer Torque
Lauer, V., Schneider, M., Meyer, T., Brächer, T., Pirro, P., Heinz, B., Heussner, F., Lägel, B., Onbasli, M. C., Ross, C. A., Hillebrands, B. & Chumak, A. V. (Corresponding author), 30 Jan 2017, In: IEEE Magnetics Letters. 8, 4 p., 3104304.

Spin-transfer torque based damping control of parametrically excited spin waves in a magnetic insulator
Lauer, V., Bozhko, D. A., Brächer, T., Pirro, P., Vasyuchka, V. I., Serga, A. A., Jungfleisch, M. B., Agrawal, M., Kobljanskyj, Y. V., Melkov, G. A., Dubs, C., Hillebrands, B. & Chumak, A. V., 4 Jan 2016, In: Applied Physics Letters. 108, 1, 5 p., 012402.

Activities

International Conference on Magnonics 2027 (Magnonics 2027)
Chumak, A. (Organiser)
2 Aug 2027 → 6 Aug 2027

Microscale Spin-Wave Devices for Next-Generation 6G Radio-Frequency Signal Processing
Chumak, A. (Invited speaker)
7 Sept 2026

Optical and Electrical Spin-Wave Detection at Millikelvin Temperatures
Chumak, A. (Invited speaker)
14 Aug 2026

Inverse-design magnonics: one device, many functionalities
Chumak, A. (Invited speaker)
5 Aug 2026

Towards quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
13 May 2026

A universal inverse-design magnonic device
Chumak, A. (Invited speaker)
9 May 2026

Lange Nacht der Forschung 2026
Chumak, A. (Participant)
24 Apr 2026

Töchtertag 2026
Chumak, A. (Participant)
23 Apr 2026

From fundamentals to device on novel unconventional computing devices
Chumak, A. (Invited speaker)
22 Apr 2026

Ultra-long-living magnons in the quantum limit
Chumak, A. (Speaker)
15 Apr 2026

Spin-wave transport at cryogenic temperatures
Chumak, A. (Invited speaker)
24 Feb 2026

Quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
10 Oct 2025

Quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
25 Sept 2025

Quantenmagnonik mit propagierenden Magnonen
Chumak, A. (Invited speaker)
23 Sept 2025

Quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
10 Sept 2025

Quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
2 Sept 2025

Long-range propagating paramagnons
Knauer, S. (Speaker), Serha, R. (Contributor), Slobodianiuk, D. (Contributor), Verba, R. (Contributor), Demokritov, S. O. (Contributor) & Chumak, A. (Contributor)
21 Aug 2025

Realization of Inverse-Design Magnonic Logic Gates
Majcen, F. (Speaker), Zenbaa, N. (Contributor), Abert, C. (Contributor), Bruckner, F. (Contributor), Mauser, N. (Contributor), Schrefl, T. (Speaker), Wang, Q. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
21 Aug 2025

Nanoscaled Spin-Wave Frequency Selective Limiter and Delay Line for 5G Technology
Davídková, K. (Speaker), Levchenko, K. (Contributor), Bruckner, F. (Contributor), Verba, R. (Contributor), Serha, R. (Contributor), Majcen, F. (Contributor), Wang, Q. (Contributor), Lindner, M. (Contributor), Dubs, C. (Contributor), Vlaminck, V. (Contributor), Klima, J. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
18 Aug 2025 → 22 Aug 2025

Realization of Inverse-Design Magnonic Logic Gates
Majcen, F. (Speaker), Zenbaa, N. (Contributor), Abert, C. (Contributor), Bruckner, F. (Contributor), Mauser, N. (Contributor), Schrefl, T. (Contributor), Wang, Q. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
31 Jul 2025

Quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
30 Jul 2025

Nanoscaled Spin-Wave Frequency Selective Limiter (FSL) and Delay Line for 5G Technology
Davídková, K. (Speaker), Levchenko, K. (Contributor), Bruckner, F. (Contributor), Verba, R. (Contributor), Serha, R. (Contributor), Majcen, F. (Contributor), Wang, Q. (Contributor), Lindner, M. (Contributor), Dubs, C. (Contributor), Vlaminck, V. (Contributor), Klima, J. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
28 Jul 2025 → 1 Aug 2025

Nanomagnetism and Magnonics (Organisational unit)
Chumak, A. (Chair)
1 Jun 2025 → 31 Dec 2026

Quantum magnonics with propagating magnons
Chumak, A. (Invited speaker)
22 Apr 2025

Nanoscale spin-wave RF devices
Chumak, A. (Invited speaker)
3 Apr 2025

Realization of Inverse-Design Magnonic Logic Gates
Majcen, F. (Speaker), Zenbaa, N. (Contributor), Abert, C. (Contributor), Bruckner, F. (Contributor), Mauser, N. (Contributor), Schrefl, T. (Contributor), Wang, Q. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
19 Mar 2025

Wavenumber-dependent magnetic losses in YIG-GGG heterostructures at millikelvin temperatures.
Schmoll, D. (Speaker), Voronov, A. (Contributor), Serha, R. (Contributor), Slobodianiuk, D. (Contributor), Levchenko, K. (Contributor), Abert, C. (Contributor), Knauer, S. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor), Verba, R. (Contributor) & Chumak, A. (Contributor)
19 Mar 2025

Nanoscale spin-wave frequency-selective limiter for 5G technology
Davídková, K. (Speaker), Levchenko, K. (Contributor), Bruckner, F. (Contributor), Verba, R. (Contributor), Majcen, F. (Contributor), Wang, Q. (Contributor), Lindner, M. (Contributor), Dubs, C. (Contributor), Vlaminck, V. (Contributor), Klima, J. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
16 Mar 2025 → 21 Mar 2025

Magnon-based data processing
Chumak, A. (Invited speaker)
27 Feb 2025

Spin waves and magnonics
Chumak, A. (Invited speaker)
13 Feb 2025

Magnonic inverse-design processor
Chumak, A. (Invited speaker)
11 Feb 2025

Austrian Physical Society (External organisation)
Chumak, A. (Chair)
2025 → …

Spin waves for novel information systems
Chumak, A. (Invited speaker)
3 Dec 2024

Magnon transport in YIG/GGG at millikelvin temperatures for quantum magnonics
Chumak, A. (Invited speaker)
20 Sept 2024

Spin wave dynamics in YIG/GGG at millikelvin temperatures
Chumak, A. (Invited speaker)
18 Sept 2024

Magnonic inverse-design processor
Chumak, A. (Speaker)
10 Sept 2024

Nanoscale Ga:YIG-Based Magnonic Crystals
Levchenko, K. (Invited speaker), Davidková, K. (Contributor), Moalic, M. (Contributor), Krawczyk, M. (Contributor), Wang, Q. (Contributor), Lamb-Camarena, S. (Contributor), Wojewoda, O. (Contributor), Heinz, B. (Contributor), Dubs, C. (Contributor), Surzhenko, O. (Contributor), Chumak, H. L. (Contributor), Maksym, P. (Contributor), Zavislyak, I. V. (Contributor), Böttcher, T. (Contributor), Ruhwedel, M. (Contributor), Pirro, P. (Contributor) & Chumak, A. (Contributor)
8 Sept 2024 → 13 Sept 2024

Enhancement of damping in YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Contributor), Schmoll, D. (Contributor), Verba, R. (Contributor), Koraltan, S. (Contributor), Urbánek, M. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Contributor)
4 Sept 2024

Nanoscale Ga:YIG-based magnonic crystals
Levchenko, K. (Speaker), Davidková, K. (Contributor), Moalic, M. (Contributor), Lamb-Camarena, S. (Contributor), Wojewoda, O. (Contributor), Heinz, B. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Wang, Q. (Contributor), Krawczyk, M. (Contributor) & Chumak, A. (Contributor)
1 Sept 2024 → 6 Sept 2024

Enhancement of damping in YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Contributor), Schmoll, D. (Contributor), Verba, R. (Contributor), Koraltan, S. (Contributor), Urbánek, M. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Contributor)
Sept 2024 → …

Nanoscaled Frequency Selective Limiters (FSLs) for 5G telecommunication
Davidková, K. (Speaker), Levchenko, K. (Contributor), Bruckner, F. (Contributor), Verba, R. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
27 Aug 2024 → 6 Sept 2024

Efficient Inverse-Design Magnonics by the Adjoint-State Method
Voronov, A. (Speaker), Bruckner, F. (Contributor), Süss, D. (Contributor), Chumak, A. (Contributor) & Abert, C. (Contributor)
3 Jul 2024

Universal magnonic machine-learning module
Chumak, A. (Speaker)
3 Jul 2024

All-electrical propagating spin-wave spectroscopy in 100nm-thin Yttrium-Iron-Garnet at millikelvin temperatures
Knauer, S. (Speaker), Davidková, K. (Contributor), Schmoll, D. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Verba, R. (Contributor), Dobrovolskiy, O. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)

30 Jun 2024

International Conference on Magnetism 2024
Chumak, A. (Organiser)
30 Jun 2024 → 5 Jul 2024

ALL-ELECTRICAL PROPAGATING SPIN-WAVE SPECTROSCOPY IN 100NM-THIN YTTRIUM-IRON-GARNET AT MILLIKELVIN TEMPERATURES
Knauer, S. (Speaker), Davidková, K. (Contributor), Schmoll, D. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Verba, R. (Contributor), Dobrovolskiy, O. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
25 Jun 2024

Magnon transport in YIG/GGG at millikelvin temperatures for quantum magnonics
Chumak, A. (Invited speaker)
18 Jun 2024

Nanoscaled Frequency Selective Limiter (FSLs) for 5G telecommunication
Davidková, K. (Speaker), Levchenko, K. (Contributor), Bruckner, F. (Contributor), Verba, R. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
18 Jun 2024

Inverse-design magnonics with nodal FD solver
Voronov, A. (Speaker), Bruckner, F. (Contributor), Süss, D. (Contributor), Chumak, A. (Contributor) & Abert, C. (Contributor)
4 Jun 2024

Spin waves for novel information systems
Chumak, A. (Invited speaker)
4 Jun 2024

Enhancement of damping in YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Contributor), Schmoll, D. (Contributor), Verba, R. (Contributor), Koraltan, S. (Contributor), Urbánek, M. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Contributor)
3 Jun 2024 → 5 Jun 2024

Introduction to computing with spin waves
Chumak, A. (Invited speaker)
Jun 2024

Spin waves for novel information systems
Chumak, A. (Invited speaker)
28 May 2024

Magnon transport in YIG/GGG at millikelvin temperatures for quantum magnonics
Chumak, A. (Invited speaker)
21 May 2024

Experimental realization of inverse-design magnonic device
Zenbaa, N. (Speaker), Abert, C. (Contributor), Majcen, F. (Contributor), Kerber, M. (Contributor), Serha, R. (Contributor), Knauer, S. (Contributor), Wang, Q. (Contributor), Schrefl, T. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
9 May 2024

Magnon transport in YIG/GGG at millikelvin temperatures for quantum magnonics
Chumak, A. (Invited speaker)
6 May 2024

Enhancement of damping in YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Contributor), Schmoll, D. (Contributor), Verba, R. (Contributor), Koraltan, S. (Contributor), Urbánek, M. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Contributor)
5 May 2024 → 10 May 2024

Increase of Spin-Wave Damping with Wavenumber in YIG/GGG at Millikelvin Temperatures
Schmoll, D. (Speaker), Serha, R. (Contributor), Slobodianiuk, D. (Contributor), Verba, R. (Contributor), Levchenko, K. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Contributor)
5 May 2024 → 10 May 2024

3D and inverse-design magnonics
Chumak, A. (Invited speaker)
1 May 2024

Propagating spin-wave spectroscopy in a liquid-phase epitaxial nanometer-thick YIG film at millikelvin temperatures
Knauer, S. (Speaker), Davidková, K. (Contributor), Schmoll, D. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Verba, R. (Contributor), Dobrovolskiy, O. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
19 Mar 2024

Magnetics Society of the IEEE (External organisation)
Chumak, A. (Chair)
1 Mar 2024 → …

Inverse-Design Magnonics
Chumak, A. (Organiser), Mauser, N. (Organiser) & Süss, D. (Organiser)
18 Feb 2024 → 20 Feb 2024

COST Action CA23136 CHIROMAG (Magnetism and Chirality: Twisting Spins, Light, and Lattices for Faster-than-Ever Spintronics) (External organisation)
Chumak, A. (Member)
2024 → …

Vortex Counting and Velocimetry for Slitted Superconducting Thin Strips
Budinská, B. (Speaker), Bevz, V. (Contributor), Yu. Mikhailov, M. (Contributor), Lamb-Camarena, S. (Contributor), Shpilinska, S. O. (Contributor), Chumak, A. (Contributor), Urbánek, M. (Contributor), Arndt, M. (Contributor), Lang, W. (Contributor) & Dobrovolskiy, O. (Contributor)
15 Sept 2023

2D Bent Nano-Conduits Made of Partially-Compensated Ga:YIG for Spin-Wave Transport
Voronov, A. (Speaker), Wojewoda, O. (Contributor), Davidková, K. (Contributor), Wang, Q. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor), Abert, C. (Contributor) & Chumak, A. (Contributor)
13 Sept 2023

Influence of Paramagnetic GGG Substrates on YIG Films at Millikelvin Temperatures
Serha, R. (Contributor), Voronov, A. (Contributor), Schmoll, D. (Contributor), Koraltan, S. (Contributor), Davidková, K. (Contributor), Budinská, B. (Contributor), Wang, Q. (Contributor), Dobrovolskiy, O. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Speaker)
10 Sept 2023 → 15 Sept 2023

Magnon transport in YIG/GGG at millikelvin temperatures
Chumak, A. (Invited speaker)
10 Sept 2023 → 15 Sept 2023

Non-reciprocal magnonic directional coupler
Zenbaa, N. (Speaker), Wang, Q. (Contributor), Davidková, K. (Contributor), Knauer, S. (Contributor), Ruhwedel, M. (Contributor), Dobrovolskiy, O. (Contributor), Koraltan, S. (Contributor), Abert, C. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Pirro, P. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
10 Sept 2023 → 15 Sept 2023

Propagating Spin-Wave Spectroscopy Studies in a Millikelvin Temperature Environment
Schmoll, D. (Speaker), Knauer, S. (Contributor), Serha, R. (Contributor), Verba, R. (Contributor), Voronov, A. (Contributor), Dubs, C. (Contributor) & Chumak, A. (Contributor)
10 Sept 2023 → 15 Sept 2023

Vortex Counting and Velocimetry for Slitted Superconducting Thin Strips
Budinská, B. (Speaker), Bevz, V. (Contributor), Yu. Mikhailov, M. (Contributor), Lamb-Camarena, S. (Contributor), Shpilinska, S. O. (Contributor), Chumak, A. (Contributor), Urbánek, M. (Contributor), Arndt, M. (Contributor), Lang, W. (Contributor) & Dobrovolskiy, O. (Contributor)
7 Sept 2023

2D curved nano-conduits for magnonic transport made of GaYIG
Voronov, A. (Speaker), Wojewoda, O. (Contributor), Davidková, K. (Contributor), Wang, Q. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
4 Sept 2023 → 8 Sept 2023

Fast isotropic exchange spin-waves in Ga:YIG for future magnonics networks
Levchenko, K. (Speaker), Böttcher, T. (Contributor), Ruhwedel, M. (Contributor), Wang, Q. (Contributor), Chumak, H. (Contributor), Maksym, P. (Contributor), Zavislyak, I. (Contributor), Dubs, C. (Contributor), Surzhenko, O. (Contributor), Hillebrands, B. (Contributor), Chumak, A. (Contributor) & Pirro, P. (Contributor)
4 Sept 2023 → 8 Sept 2023

Influence of GGG substrate on YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Speaker), Schmoll, D. (Speaker), Verba, R. (Speaker), Koraltan, S. (Speaker), Davidková, K. (Speaker), Budinská, B. (Speaker), Wang, Q. (Speaker), Dobrovolskiy, O. (Speaker), Urbánek, M. (Speaker), Lindner, M. (Speaker), Reimann, T. (Speaker), Dubs, C. (Speaker), Abert, C. (Speaker), Süss, D. (Speaker), Knauer, S. (Speaker) & Chumak, A. (Speaker)
4 Sept 2023 → 8 Sept 2023

Nonlinear spin-wave transport in the YIG nano-waveguides
Davidková, K. (Speaker), Wang, Q. (Contributor), Voronov, A. (Contributor), Wojewoda, O. (Contributor), Knauer, S. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
4 Sept 2023 → 8 Sept 2023

Propagating spin-wave spectroscopy in a liquid-phase epitaxial nanometer-thick YIG film at millikelvin temperatures
Knauer, S. (Speaker), Davidková, K. (Contributor), Schmoll, D. (Speaker), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Dobrovolskiy, O. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
4 Sept 2023 → 8 Sept 2023

Propagating Spin-Wave Spectroscopy Studies in a Millikelvin Temperature Environment
Schmoll, D. (Speaker), Knauer, S. (Contributor), Serha, R. (Contributor), Verba, R. (Contributor), Voronov, A. (Contributor), Dubs, C. (Contributor) & Chumak, A. (Contributor)
4 Sept 2023 → 8 Sept 2023

International Conference on Magnonics
Chumak, A. (Organiser)
30 Jul 2023 → 3 Aug 2023

Spin-wave transport in two-dimensional partially-compensated Ga:YIG structures
Voronov, A. (Speaker), Wojewoda, O. (Contributor), Davidková, K. (Contributor), Wang, Q. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Süss, D. (Contributor), Abert, C. (Contributor) & Chumak, A. (Contributor)
30 Jul 2023 → 3 Aug 2023

Magnon transport in YIG/GGG at millikelvin temperatures
Chumak, A. (Invited speaker)
26 Jun 2023

Magnonics and magnetization dynamics
Chumak, A. (Invited speaker)
14 Jun 2023

Inverse-design micromagnetic simulation solver based on PyTorch framework
Voronov, A. (Speaker), Wang, Q. (Contributor), Bruckner, F. (Contributor), Süss, D. (Contributor), Chumak, A. (Contributor) & Abert, C. (Contributor)
5 Jun 2023

Magnon transport in YIG/GGG at millikelvin temperatures
Chumak, A. (Invited speaker)
25 May 2023

Intermag 2023 IEEE International Magnetic Conference
Chumak, A. (Panellist)
18 May 2023

Magnetic Vector Field Dependent Propagating Spin-Wave Spectroscopy At Millikelvin Temperatures
Knauer, S. (Speaker), Peinhaupt, S. (Contributor), Davidková, K. (Contributor), Schmoll, D. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Lindner, M. (Contributor), Reimann, T. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
16 May 2023 → 19 May 2023

Influence of GGG substrate on YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Speaker), Schmoll, D. (Speaker), Verba, R. (Speaker), Koraltan, S. (Speaker), Davidková, K. (Speaker), Budinská, B. (Speaker), Wang, Q. (Speaker), Dobrovolskiy, O. (Speaker), Urbánek, M. (Speaker), Lindner, M. (Speaker), Reimann, T. (Speaker), Dubs, C. (Speaker), Abert, C. (Speaker), Süss, D. (Speaker), Knauer, S. (Speaker) & Chumak, A. (Speaker)
15 May 2023 → 19 May 2023

Influence of Paramagnetic GGG Substrates on YIG Films at Millikelvin Temperatures
Serha, R. (Contributor), Voronov, A. (Contributor), Schmoll, D. (Contributor), Koraltan, S. (Contributor), Davidková, K. (Contributor), Budinská, B. (Contributor), Wang, Q. (Contributor), Dobrovolskiy, O. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Speaker)
15 May 2023 → 19 May 2023

Intermag 2023 IEEE International Magnetic Conference
Chumak, A. (Organiser)
15 May 2023 → 23 May 2023

Spin waves for novel information systems
Chumak, A. (Selected presenter)
23 Apr 2023

Propagating spin-wave spectroscopy in nanometer-thick YIG films at millikelvin temperature
Chumak, A. (Invited speaker)
7 Dec 2022 → 9 Dec 2022

Propagating Spin-Wave Spectroscopy Studies in a Millikelvin Temperature Environment
Schmoll, D. (Speaker), Knauer, S. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Davidková, K. (Contributor), Verba, R. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
7 Dec 2022

Influence of GGG substrate on YIG films at millikelvin temperatures
Serha, R. (Speaker), Voronov, A. (Contributor), Schmoll, D. (Contributor), Verba, R. (Contributor), Koraltan, S. (Contributor), Davidková, K. (Contributor), Budinská, B. (Contributor), Wang, Q. (Contributor), Dobrovolskiy, O. (Contributor), Urbánek, M. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor), Knauer, S. (Contributor) & Chumak, A. (Contributor)
Dec 2022 → …

Out-of-plane nano-magnonics & SW RF applications
Chumak, A. (Invited speaker)
24 Oct 2022

Linear and non-linear out-of-plane nano-magnonics
Chumak, A. (Invited speaker)
14 Sept 2022

Nanoscale partially compensated Ga:YIG for fast exchange magnonics
Levchenko, K. (Speaker), Böttcher, T. (Contributor), Ruhwedel, M. (Contributor), Wang, Q. (Contributor), Chumak, H. (Contributor), Maksym, P. (Contributor), Zavislyak, I. (Contributor), Dubs, C. (Contributor), Surzhenko, O. (Contributor), Hillebrands, B. (Contributor), Chumak, A. (Contributor) & Pirro, P. (Contributor)
12 Sept 2022 → 16 Sept 2022

Characterisation of 3D direct write cobalt iron nanostructures with curved geometries
Lamb-Camarena, S. (Speaker), Wang, Q. (Contributor), Porrati, F. (Contributor), Huth, M. (Contributor), Urbánek, M. (Contributor), Chumak, A. (Contributor) & Dobrovolskiy, O. (Contributor)
8 Sept 2022

Propagating Spin-Wave Spectroscopy Studies in a Millikelvin Temperature Environment
Schmoll, D. (Speaker), Knauer, S. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Davidková, K. (Contributor), Verba, R. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
6 Sept 2022

VSM and EPR characterization of GGG at ultralow temperatures
Serha, R. (Speaker), Knauer, S. (Contributor), Schmoll, D. (Contributor), Davídková, K. (Contributor), Wang, Q. (Contributor), Budinská, B. (Contributor), Dobrovolskiy, O. (Contributor), Demidov, V. E. (Contributor), Urbánek, M. (Contributor), Demokritov, S. O. (Contributor) & Chumak, A. (Contributor)
Sept 2022 → …

Out-of-plane nano-magnonics
Chumak, A. (Invited speaker)
22 Aug 2022

Spin-Wave Physics At Ultralow Temperatures
Knauer, S. (Speaker), Schmoll, D. (Contributor), Serha, R. (Contributor), Davidková, K. (Contributor), Peinhaupt, S. (Contributor), Wang, Q. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)

22 Aug 2022 → 25 Aug 2022

Millikelvin propagating spin-wave spectroscopy for quantum magnonics and hybrid quantum systems
Schmoll, D. (Speaker), Knauer, S. (Contributor), Serha, R. (Contributor), Voronov, A. (Contributor), Wang, Q. (Contributor), Davidková, K. (Contributor), Verba, R. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
2 Aug 2022

Out-of-plane nano-magnonics
Chumak, A. (Invited speaker)
1 Aug 2022

Non-reciprocal magnonic directional coupler
Zenbaa, N. (Speaker), Wang, Q. (Contributor), Davidková, K. (Contributor), Knauer, S. (Contributor), Ruhwedel, M. (Contributor), Dobrovolskiy, O. (Contributor), Koraltan, S. (Contributor), Abert, C. (Contributor), Dubs, C. (Contributor), Urbánek, M. (Contributor), Pirro, P. (Contributor), Süss, D. (Contributor) & Chumak, A. (Contributor)
31 Jul 2022 → 4 Aug 2022

Out-of-plane nano-magnonic
Chumak, A. (Invited speaker)
31 Jul 2022

Paramagnonics at ultralow temperatures
Knauer, S. (Speaker), Schmoll, D. (Contributor), Serha, R. (Contributor), Davídková, K. (Contributor), Wang, Q. (Contributor), Budinská, B. (Contributor), Dobrovolskiy, O. (Contributor), Demidov, V. E. (Contributor), Urbánek, M. (Contributor), Demokritov, S. O. (Contributor) & Chumak, A. (Contributor)
31 Jul 2022 → 4 Aug 2022

Towards fast exchange magnonics: partially compensated Ga:YIG garnets
Levchenko, K. (Speaker), Böttcher, T. (Contributor), Ruhwedel, M. (Contributor), Wang, Q. (Contributor), Chumak, H. (Contributor), Maksym, P. (Contributor), Zavislyak, I. (Contributor), Dubs, C. (Contributor), Surzhenko, O. (Contributor), Hillebrands, B. (Contributor), Chumak, A. (Contributor) & Pirro, P. (Contributor)
31 Jul 2022 → 4 Aug 2022

JEMS 2022 - Joint European Magnetism Symposia conference (Warsaw, Poland)
Chumak, A. (Organiser)
24 Jul 2022 → 29 Jul 2022

Millikelvin propagating spin-wave spectroscopy for quantum magnonics
Schmoll, D. (Contributor), Serha, R. (Contributor), Wang, Q. (Contributor) & Chumak, A. (Speaker)
24 Jul 2022 → 29 Jul 2022

Nano-scale magnonic directional coupler
Chumak, A. (Speaker)
24 Jul 2022 → 29 Jul 2022

Non-reciprocal magnonic directional coupler
Zenbaa, N. (Contributor), Wang, Q. (Contributor), Davidková, K. (Contributor), Knauer, S. (Contributor), Dobrovolskiy, O. (Contributor), Koraltan, S. (Contributor), Abert, C. (Contributor), Süss, D. (Contributor) & Chumak, A. (Speaker)
24 Jul 2022 → 29 Jul 2022

Paramagnetic resonance in GGG at ultralow temperatures
Serha, R. (Speaker), Knauer, S. (Contributor), Schmoll, D. (Contributor), Davídková, K. (Contributor), Wang, Q. (Contributor), Budinská, B. (Contributor), Dobrovolskiy, O. (Contributor), Demidov, V. E. (Contributor), Urbánek, M. (Contributor), Demokritov, S. O. (Contributor) & Chumak, A. (Contributor)
24 Jul 2022 → 29 Jul 2022

Towards fast exchange magnonics: partially compensated Ga:YIG garnets
Levchenko, K. (Speaker), Böttcher, T. (Contributor), Ruhwedel, M. (Contributor), Wang, Q. (Contributor), Chumak, H. (Contributor), Maksym, P. (Contributor), Zavislyak, I. (Contributor), Dubs, C. (Contributor), Surzhenko, O. (Contributor), Hillebrands, B. (Contributor), Chumak, A. (Contributor) & Pirro, P. (Contributor)
24 Jul 2022 → 29 Jul 2022

Characterisation of 3D direct write cobalt iron nanostructures with curved geometries
Lamb-Camarena, S. (Speaker), Wang, Q. (Contributor), Porrati, F. (Contributor), Huth, M. (Contributor), Urbánek, M. (Contributor), Chumak, A. (Contributor) & Dobrovolskiy, O. (Contributor)
20 Jul 2022

Introduction to computing with spin waves (invited lecture)
Chumak, A. (Invited speaker)
20 Jul 2022

Rising speed limits for fluxons via edge quality improvement in MoSi thin films
Budinská, B. (Invited speaker), Aichner, B. (Contributor), Vodolazov, D. Y. (Contributor), Mikhailov, M. Y. (Contributor), Porrati, F. (Contributor), Huth, M. (Contributor), Lang, W. (Contributor), Chumak, A. (Contributor) & Dobrovolskiy, O. (Contributor)
19 Jul 2022

Characterisation of 3D direct write cobalt iron nanostructures with curved geometries
Lamb-Camarena, S. (Speaker), Wang, Q. (Contributor), Porrati, F. (Contributor), Huth, M. (Contributor), Urbánek, M. (Contributor), Chumak, A. (Contributor) & Dobrovolskiy, O. (Contributor)
13 Jul 2022

Towards cryogenic measurements in thin-film YIG
Davidková, K. (Speaker), Knauer, S. (Contributor), Schmoll, D. (Contributor), Chumak, A. (Contributor), Dubs, C. (Contributor) & Urbánek, M. (Speaker)
Jul 2022 → …

VSM and EPR characterization of GGG at ultralow temperatures
Serha, R. (Speaker), Knauer, S. (Speaker), Schmoll, D. (Contributor), Davídková, K. (Contributor), Wang, Q. (Contributor), Budinská, B. (Contributor), Dobrovolskiy, O. (Contributor), Demidov, V. E. (Contributor), Urbánek, M. (Contributor) & Chumak, A. (Contributor)
Jul 2022 → …

Advances in Millikelvin- and Nano-Magnonics
Chumak, A. (Invited speaker)
14 Jun 2022

Beyond electronics: partially compensated garnets for magnonics computing
Levchenko, K. (Speaker), Böttcher, T. (Contributor), Ruhwedel, M. (Contributor), Wang, Q. (Contributor), Chumak, H. (Contributor), Maksym, P. (Contributor), Zavislyak, I. (Contributor), Dubs, C. (Contributor), Surzhenko, O. (Contributor), Hillebrands, B. (Contributor), Chumak, A. (Contributor) & Pirro, P. (Contributor)
5 May 2022

Magnon-based data processing
Chumak, A. (Speaker)
3 Mar 2022

Magnon-based data processing
Chumak, A. (Invited speaker)
1 Nov 2021

Nanoscale spin-wave directional coupler for all-magnon circuits
Chumak, A. (Invited speaker)
25 Oct 2021

Inverse-design magnonics
Chumak, A. (Invited speaker)
13 Oct 2021

Inverse-design magnonics
Chumak, A. (Invited speaker)
7 Sept 2021

Beating speed limits for Abrikosov vortices in superconducting thin films via edge-barrier engineering
Budinská, B. (Invited speaker), Aichner, B. (Contributor), Vodolazov, D. Y. (Contributor), Mikhailov, M. Y. (Contributor), Porrati, F. (Contributor), Huth, M. (Contributor), Lang, W. (Contributor), Chumak, A. (Contributor) & Dobrovolskiy, O. (Contributor)
31 Aug 2021 → 2 Sept 2021

Inverse-design magnonics
Chumak, A. (Invited speaker)
8 Jun 2021

Magnon-based data processing
Chumak, A. (Invited speaker)
21 May 2021

Edge barrier effects on the flux-flow instability in superconducting MoSi films
Budinská, B. (Invited speaker), Aichner, B. (Contributor), Vodolazov, D. Y. (Contributor), Mikhailov, M. Y. (Contributor), Porrati, F. (Contributor), Huth, M. (Contributor), Lang, W. (Contributor), Chumak, A. (Contributor) & Dobrovolskiy, O. (Contributor)
10 May 2021

The interplay between the rapid cooling-induced BEC and SHE-STT-driven bullet mode
Chumak, A. (Speaker)
28 Apr 2021

Intermag 2021
Chumak, A. (Organiser)
26 Apr 2021 → 30 Apr 2021

Nano-Magnonics: From Room to Cryogenic Temperatures
Chumak, A. (Invited speaker)
19 Apr 2021

Spin-wave data processing in YIG nanostructures
Chumak, A. (Invited speaker)
4 Nov 2020

Spin-wave data processing
Chumak, A. (Invited speaker)
27 Feb 2020

Towards magnonic neuromorphic computing
Chumak, A. (Invited speaker)

21 Feb 2020

Nano-structured Yttrium Iron Garnet for data processing
Chumak, A. (Contributor)
20 Feb 2020

European Magnetism Association (External organisation)
Chumak, A. (Member)
2020 → …

Joint European Magnetic Symposia (External organisation)
Chumak, A. (Member)
2020 → …

Magnetics Society of the IEEE (External organisation)
Chumak, A. (Member)
2020 → …

Research Platform MMM Mathematics-Magnetism-Materials (Organisational unit)
Chumak, A. (Member)
2020 → …

Wolfgang Pauli Institute (WPI) Vienna (External organisation)
Chumak, A. (Member)
2020 → …

Nano-structured Yttrium Iron Garnet for data processing
Chumak, A. (Keynote speaker)
Nov 2019

Realization of a Nanoscale Magnonic Directional Coupler for All-Magnon Circuits
Chumak, A. (Contributor)
Nov 2019

Spin Wave Propagation in Individual Nano-Sized Yttrium Iron Garnet Magnonic Conduits
Chumak, A. (Contributor)
Nov 2019

Austrian Physical Society (External organisation)
Chumak, A. (Member)
2019 → …

Österreichischer Universitätsprofessor/Innenverband (External organisation)
Chumak, A. (Member)
2019 → …

Magnetics Society of the IEEE (External organisation)
Chumak, A. (Member)
2016 → …

Deutscher Hochschulverband (DHV) (External organisation)
Chumak, A. (Member)
2014 → 2019

Deutsche Physikalische Gesellschaft (External organisation)
Chumak, A. (Member)
2011 → …

Magnetics Society of the IEEE (External organisation)
Chumak, A. (Member)
2011 → …

Press/Media

A new generation of computers
Chumak, A.
14/04/21
1 Media contribution

A new way towards super-fast motion of vortices in superconductors discovered
Chumak, A.
3/07/20
1 Media contribution

Catching Magnons!
Chumak, A.
1/03/23
1 Media contribution

Computer designs magnonic devices
Chumak, A.
12/05/21
1 Media contribution

Cool down fast to advance quantum nanotechnology
Chumak, A.
21/04/20
1 Media contribution

Der Spin schlägt Wellen
Chumak, A.
26/08/23
1 Media contribution

Flipping the Script: How Magnonic Hardware Designs Itself
Majcen, F. & Chumak, A.
25/06/25
1 Media contribution

Flipping the Script: Inverse-Design as Game-Changer in Physics
Chumak, A.
4/02/25
1 Media contribution

Integrated circuit of pure magnons
Chumak, A.
20/10/20
1 Media contribution

Interview for the Ukrainian Science Diaspora
Chumak, A.
9/11/25
1 item of Media coverage

Magnonic computing: Faster spin waves could make novel computing systems possible
Chumak, A. & Wang, Q.
16/08/23
2 Media contributions

Magnonic processors could revolutionise computing
Chumak, A.
27/10/24
1 item of Media coverage

Magnonic repeaters “tidy up signals” and contribute to energy-efficient data processing
Chumak, A.
5/09/24
1 Media contribution

Magnonik Nanofasern ebnen den Weg zu einer neuen Art von Computern
Chumak, A.
1/07/20
1 Media contribution

Nanomagnetism and Magnonics YouTube Channel
Chumak, A.
19/06/20
1 Media contribution

Repository: Free to use material from the NanoMag
Chumak, A.
1/06/23
1 Media contribution

Spintronics to control the Bose-Einstein Condensation of Magnons
Chumak, A.
6/12/21
1 Media contribution

Testing Materials at Ultra-Low Temperatures for Quantum Magnonic Devices
Chumak, A.
4/07/24
1 Media contribution

Those magical magnons
Chumak, A.
1/05/23
1 Media contribution

Warum die Wissenschaft mit torkelnden Teilchen rechnet
Chumak, A.
7/05/23
1 item of Media coverage

Projects

CurviMag: Curvature-induced effects in magnetic nanostructures
Dobrovolskiy, O. (Project Lead) & Chumak, A. (Scientific Project Staff)
1/01/21 → 31/12/23

Functional layers of nm-thick YIG films and microstructures
Chumak, A. (Project Lead), Levchenko, K. (Project Staff) & Knauer, S. (Affiliated Project Staff)
1/10/19 → 30/09/22

Inverse-Design Micromagnetic-Eddy-Current Solver (IMECS)
Bruckner, F. (Project Lead), Süss, D. (Co-Lead), Chumak, A. (Co-Lead) & Vilsmeier, F. (Project Staff)
1/10/24 → 30/09/28

Magnonic Devices for RF Applications and Unconventional Computing
Davídková, K. (Co-Lead) & Chumak, A. (Project Lead)
1/11/25 → 31/10/27

MagnonCircuits: Nano-Scale Magnonic Circuits for Novel Computing Systems
Chumak, A. (Project Lead), Wang, Q. (Project Staff), Knauer, S. (Scientific Project Staff) & Dobrovolskiy, O. (Scientific Project Staff)
1/06/16 → 30/11/21

5G-Spin: Nanoscale spin-wave RF filters and multiplexers for 5G communication systems
Chumak, A. (Project Lead)
1/09/22 → 29/02/24

Nanoscale topological magnonic crystals
Levchenko, K. (Project Lead) & Chumak, A. (Co-Lead)
1/11/23 → 31/10/26

MagFunc: Non-Reciprocal 3D Architectures for Magnonic Functionalities
Chumak, A. (Project Lead), Dobrovolskiy, O. (Scientific Project Staff), Wang, Q. (Scientific Project Staff), Süss, D. (Co-Lead), Abert, C. (Scientific Project Staff), Voronov, A. (Scientific Project Staff) & Zenbaa, N. (Scientific Project Staff)
1/10/20 → 30/09/24

OMNI: On-chip quantum MagNonIcs
Chumak, A. (Project Lead) & Knauer, S. (Co-Lead)
1/01/22 → 31/12/24

Propagating Low-Energy 4f Paramagnons
Chumak, A. (Project Lead), Knauer, S. (Scientific Project Staff), Voronov, A. (Scientific Project Staff), Schmoll, D. (Scientific Project Staff) & Serha, R. (Scientific Project Staff)
1/01/24 → 31/12/27

Scalable Magnonic Neural Networks
Chumak, A. (Project Lead), Süss, D. (Co-Lead), Abert, C. (Co-Lead) & Vilsmeier, F. (Co-Lead)
1/05/25 → 30/04/29

We catch magnons
Chumak, A. (Project Lead) & del Real Lavergne, P. (Co-Lead)
3/12/21 → 2/12/22