

References

- R. Beck. Magnetic fields in spiral galaxies. *Astronomy and Astrophysics Review*, 24, Dec. 2015. doi: 10.1007/s00159-015-0084-4. URL <https://ui.adsabs.harvard.edu/#abs/2015A&ARv..24....4B>.
- P. Blasi, E. Amato, and P. D. Serpico. Spectral Breaks as a Signature of Cosmic Ray Induced Turbulence in the Galaxy. *Physical Review Letters*, 109(6):061101, aug 2012. ISSN 0031-9007. doi: 10.1103/PhysRevLett.109.061101. URL <https://link.aps.org/doi/10.1103/PhysRevLett.109.061101>.
- F. Boulanger, T. Ensslin, A. Fletcher, P. Girichides, S. Hackstein, M. Haverkorn, J. R. Hörandel, T. Jaffe, J. Jasche, M. Kachelriess, K. Kotera, C. Pfrommer, J. P. Rachen, L. F. S. Rodrigues, B. Ruiz-Granados, A. Seta, A. Shukurov, G. Sigl, T. Steininger, V. Vacca, E. van der Velden, A. van Vliet, and J. Wang. IMAGINE: a comprehensive view of the interstellar medium, Galactic magnetic fields and cosmic rays. *J. Cosmol. Astropart. Phys.*, 08(0):049–049, Aug. 2018. doi: 10.1088/1475-7516/2018/08/049. URL http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2018JCAP...08..049B&link_type=EJOURNAL.
- B. Burkhart and A. Lazarian. The Phase Coherence of Interstellar Density Fluctuations. *ApJ*, 827:26, Aug. 2016. doi: 10.3847/0004-637X/827/1/26. URL <http://adsabs.harvard.edu/abs/2016ApJ...827...26B>.
- B. Burkhart, A. Lazarian, and B. M. Gaensler. Properties of Interstellar Turbulence from Gradients of Linear Polarization Maps. *ApJ*, 749:145, Apr. 2012. doi: 10.1088/0004-637X/749/2/145. URL <http://adsabs.harvard.edu/abs/2012ApJ...749..145B>.
- S. Colafrancesco, S. Profumo, and P. Ullio. Detecting dark matter WIMPs in the Draco dwarf: a multi-wavelength perspective. *Physical Review D - Particles, Fields, Gravitation and Cosmology*, 75(2):023513, jul 2006. ISSN 15507998. doi: 10.1103/PhysRevD.75.023513. URL <https://link.aps.org/doi/10.1103/PhysRevD.75.023513><http://arxiv.org/abs/astro-ph/0607073><http://dx.doi.org/10.1103/PhysRevD.75.023513>.
- M.-Y. Cui, Q. Yuan, Y.-L. S. Tsai, and Y.-Z. Fan. Possible Dark Matter Annihilation Signal in the AMS-02 Antiproton Data. *Physical Review Letters*, 118(19):191101, may 2017. ISSN 0031-9007. doi: 10.1103/PhysRevLett.118.191101. URL <http://arxiv.org/abs/1610.03840><http://dx.doi.org/10.1103/PhysRevLett.118.191101><https://link.aps.org/doi/10.1103/PhysRevLett.118.191101>.
- A. Cuoco, M. Krämer, and M. Korsmeier. Novel Dark Matter Constraints from Antiprotons in Light of AMS-02. *Physical Review Letters*, 118(19):191102, may 2017. ISSN 0031-9007. doi: 10.1103/PhysRevLett.118.191102. URL <http://arxiv.org/abs/1610.03071><http://dx.doi.org/10.1103/PhysRevLett.118.191102><https://link.aps.org/doi/10.1103/PhysRevLett.118.191102>.
- C. C. Evrigen, F. A. Gent, A. Shukurov, A. Fletcher, and P. Bushby. The distribution of mean and fluctuating magnetic fields in the multiphase interstellar medium. *MNRAS*, 464: L105–L109, Jan. 2017. doi: 10.1093/mnrasl/slw196. URL <https://ui.adsabs.harvard.edu/#abs/2017MNRAS.464L.105E>.
- C. Evoli, D. Gaggero, A. Vittino, G. Di Bernardo, M. Di Mauro, A. Ligorini, P. Ullio, and D. Grasso. Cosmic-ray propagation with DRAGON2: I. numerical solver and astrophysical

- ingredients. jul 2016. doi: 10.1088/1475-7516/2017/02/015. URL <http://arxiv.org/abs/1607.07886><http://dx.doi.org/10.1088/1475-7516/2017/02/015>.
- C. Evoli, P. Blasi, G. Morlino, and R. Aloisio. Origin of the Cosmic Ray Galactic Halo Driven by Advected Turbulence and Self-Generated Waves. *Physical Review Letters*, 121(2):021102, jul 2018. ISSN 0031-9007. doi: 10.1103/PhysRevLett.121.021102. URL <https://link.aps.org/doi/10.1103/PhysRevLett.121.021102>.
- D. Gaggero and M. Valli. Impact of cosmic-ray physics on dark matter indirect searches. feb 2018. URL <http://arxiv.org/abs/1802.00636>.
- F. A. Gent, A. Shukurov, A. Fletcher, G. R. Sarson, and M. J. Mantere. The supernova-regulated ISM - I. The multiphase structure. *MNRAS*, 432:1396–1423, June 2013. doi: 10.1093/mnras/stt560.
- T. R. Jaffe, J. P. Leahy, A. J. Banday, S. M. Leach, S. R. Lowe, and A. Wilkinson. Modelling the Galactic magnetic field on the plane in two dimensions. *MNRAS*, 401(2):1013–1028, Jan. 2010. doi: 10.1111/j.1365-2966.2009.15745.x. URL <http://mnras.oxfordjournals.org/cgi/doi/10.1111/j.1365-2966.2009.15745.x>.
- T. R. Jaffe, A. J. Banday, J. P. Leahy, S. Leach, and A. W. Strong. Connecting synchrotron, cosmic rays and magnetic fields in the plane of the Galaxy. *MNRAS*, 416(2):1152–1162, Sept. 2011. doi: 10.1111/j.1365-2966.2011.19114.x. URL http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2011MNRAS.416.1152J&link_type=ABSTRACT.
- T. R. Jaffe, K. M. Ferrière, A. J. Banday, A. W. Strong, E. Orlando, J. F. Macías-Pérez, L. Fauvet, C. Combet, and E. Falgarone. Comparing polarized synchrotron and thermal dust emission in the Galactic plane. *MNRAS*, 431:683–694, May 2013. doi: 10.1093/mnras/stt200. URL <https://ui.adsabs.harvard.edu/#abs/2013MNRAS.431..683J>.
- R. Jansson and G. R. Farrar. The Galactic Magnetic Field. *ApJL*, 761(1):L11, Dec. 2012. doi: 10.1088/2041-8205/761/1/L11. URL http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2012ApJ...761L..11J&link_type=ABSTRACT.
- O. G. King, M. E. Jones, E. J. Blackhurst, C. Copley, R. J. Davis, C. Dickinson, C. M. Holler, M. O. Irfan, J. J. John, J. P. Leahy, J. Leech, S. J. C. Muchovej, T. J. Pearson, M. A. Stevenson, and A. C. Taylor. The C-Band All-Sky Survey (C-BASS): design and implementation of the northern receiver. *MNRAS*, 438:2426–2439, Mar. 2014. doi: 10.1093/mnras/stt2359.
- R. Kissmann. PICARD: A novel code for the Galactic Cosmic Ray propagation problem. *Astroparticle Physics*, 55:37–50, jan 2014. ISSN 09276505. doi: 10.1016/j.astropartphys.2014.02.002. URL <http://arxiv.org/abs/1401.4035><http://dx.doi.org/10.1016/j.astropartphys.2014.02.002>.
- A. Lazarian and A. Beresnyak. Cosmic Ray Scattering in Compressible Turbulence. *Monthly Notices of the Royal Astronomical Society*, 373(3):1195–1202, jun 2006. ISSN 0035-8711. doi: 10.1111/j.1365-2966.2006.11093.x. URL <https://academic.oup.com/mnras/article-lookup/doi/10.1111/j.1365-2966.2006.11093.x><http://arxiv.org/abs/astro-ph/0606737><http://dx.doi.org/10.1111/j.1365-2966.2006.11093.x>.
- H.-b. Li, M. Fang, T. Henning, and J. Kainulainen. The Link between Magnetic Fields and Filamentary Clouds: Bimodal Cloud Orientations in the Gould Belt. *Monthly Notices of the Royal Astronomical Society*, 436(4):3707–3719, oct 2013. ISSN 00358711. doi: 10.1093/mnras/stt1849. URL <http://arxiv.org/abs/1310.6261><http://dx.doi.org/10.1093/mnras/stt1849>.

- H.-b. Li, H. Jiang, X. Fan, Q. Gu, and Y. Zhang. The link between magnetic field orientations and star formation rates. *Nature Astronomy*, 1(8):0158, jun 2017. ISSN 2397-3366. doi: 10.1038/s41550-017-0158. URL <http://www.nature.com/articles/s41550-017-0158>.
- P. Mertsch and S. Sarkar. Loops and spurs: the angular power spectrum of the Galactic synchrotron background. *J. Cosmol. Astropart. Phys.*, 2013(06):041–041, June 2013. doi: 10.1088/1475-7516/2013/06/041. URL <http://stacks.iop.org/1475-7516/2013/i=06/a=041?key=crossref.b424b6852c5627e05fb42ce4c4ff669a>.
- N. Oppermann, H. Junkewitz, G. Robbers, M. R. Bell, T. A. Enßlin, A. Bonafede, R. Braun, J. C. Brown, T. E. Clarke, I. J. Feain, B. M. Gaensler, A. Hammond, L. Harvey-Smith, G. Heald, M. Johnston-Hollitt, U. Klein, P. P. Kronberg, S. A. Mao, N. M. McClure-Griffiths, S. P. O’Sullivan, L. Pratley, T. Robishaw, S. Roy, D. H. F. M. Schnitzeler, C. Sotomayor-Beltran, J. Stevens, J. M. Stil, C. Sunstrum, A. Tanna, A. R. Taylor, and C. L. van Eck. An improved map of the Galactic Faraday sky. *A&A*, 542:93, June 2012. doi: 10.1051/0004-6361/201118526. URL http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2012A%26A...542A..930&link_type=ABSTRACT.
- E. Orlando, G. Johannesson, I. V. Moskalenko, T. A. Porter, and A. Strong. GALPROP cosmic-ray propagation code: recent results and updates. dec 2017. URL <http://arxiv.org/abs/1712.09755>.
- C. Pfrommer, R. Pakmor, K. Schaal, C. M. Simpson, and V. Springel. Simulating cosmic ray physics on a moving mesh. *Monthly Notices of the Royal Astronomical Society*, 465(4):4500–4529, mar 2017. ISSN 13652966. doi: 10.1093/mnras/stw2941. URL <http://arxiv.org/abs/1604.07399><http://dx.doi.org/10.1093/mnras/stw2941><https://academic.oup.com/mnras/article-lookup/doi/10.1093/mnras/stw2941>.
- Planck Collaboration I. Planck 2015 results. I. Overview of products and scientific results. *A&A*, 594:A1, Sept. 2016. doi: 10.1051/0004-6361/201527101.
- Planck Collaboration LIV. Planck intermediate results. LIV. Polarized dust foregrounds. *ArXiv e-prints*, Jan. 2018. URL <http://adsabs.harvard.edu/abs/2018arXiv180104945P>.
- Planck Collaboration XLII. Planck intermediate results. XLII. Large-scale Galactic magnetic fields. *A&A*, 596:A103, Dec. 2016. doi: 10.1051/0004-6361/201528033. URL <http://adsabs.harvard.edu/abs/2016A%26A...596A.103P>.
- Planck Collaboration XX. Planck intermediate results. XX. Comparison of polarized thermal emission from Galactic dust with simulations of MHD turbulence. *A&A*, 576, Apr. 2015. doi: 10.1051/0004-6361/201424086.
- A. Seta, A. Shukurov, T. S. Wood, P. J. Bushby, and A. P. Snodin. Relative distribution of cosmic rays and magnetic fields. *Monthly Notices of the Royal Astronomical Society*, 473(4):4544–4557, feb 2018. ISSN 0035-8711. doi: 10.1093/mnras/stx2606. URL <http://arxiv.org/abs/1708.07499><http://academic.oup.com/mnras/article/473/4/4544/4411829>.
- A. Shukurov, A. P. Snodin, A. Seta, P. J. Bushby, and T. S. Wood. Cosmic Rays in Intermittent Magnetic Fields. *The Astrophysical Journal*, 839(1):L16, apr 2017. ISSN 2041-8213. doi: 10.3847/2041-8213/aa6aa6. URL <http://arxiv.org/abs/1702.06193><http://stacks.iop.org/2041-8205/839/i=1/a=L16?key=crossref.bd6228c92c6f8590d98affa5599a3aba><http://dx.doi.org/10.3847/2041-8213/aa6aa6>.

- T. Steininger, T. A. Enßlin, M. Greiner, T. Jaffe, E. van der Velden, J. Wang, M. Haverkorn, J. R. Hörandel, J. Jasche, and J. P. Rachen. Inferring Galactic magnetic field model parameters using IMAGINE - An Interstellar MAGnetic field INference Engine. *ArXiv e-prints*, Jan. 2018. URL <http://adsabs.harvard.edu/abs/2018arXiv180104341S>.
- A. W. Strong, I. V. Moskalenko, and V. S. Ptuskin. Cosmic-ray propagation and interactions in the Galaxy. *Annual Review of Nuclear and Particle Science*, 57(1): 285–327, jan 2007. ISSN 0163-8998. doi: 10.1146/annurev.nucl.57.090506.123011. URL <http://www.annualreviews.org/doi/10.1146/annurev.nucl.57.090506.123011><http://10.0.4.56/07303084.2015.1023127%5Cnhttp://proxy.wexler.hunter.cuny.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true{%&}db=eue{%&}AN=109131389{%&}site=ehost-livehttp://arxiv.org/abs/astro-ph/0701517http://dx.doi.org/10.1146/annurev.nucl.57.090506.123011>.
- X. H. Sun, W. Reich, A. Waelkens, and T. A. Enßlin. Radio observational constraints on Galactic 3D-emission models. *A&A*, 477(2):573–592, Jan. 2008. doi: 10.1051/0004-6361:20078671. URL http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2008A%26A...477..573S&link_type=ABSTRACT.
- C. Van Eck, J. Brown, J. Stil, K. Rae, S. Mao, B. Gaensler, A. Shukurov, A. Taylor, M. Haverkorn, P. Kronberg, and N. McClure-Griffiths. Modeling the Magnetic Field in the Galactic Disk Using New Rotation Measure Observations from the Very Large Array. *ApJ*, 728:97–97, 2011. doi: doi:10.1088/0004-637X/728/2/97. URL <http://adsabs.harvard.edu/abs/2011ApJ...728...97V>.
- A. Waelkens, T. Jaffe, M. Reinecke, F. S. Kitaura, and T. A. Enßlin. Simulating polarized Galactic synchrotron emission at all frequencies. The Hammurabi code. *A&A*, 495(2):697–706, Feb. 2009. doi: 10.1051/0004-6361:200810564. URL http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2009A%26A...495..697W&link_type=EJOURNAL.
- P. C. XXXIII.