

Royal Astronomical Society: Specialist Discussion Meeting

Galactic magnetic fields: connecting theory, simulations, and observations on 8th Oct 2021

Time (BST)	Speaker	Title / Relevant Question
10:00 - 10:10	RAS	Welcome and Introduction
10:10 - 10:35	Kandaswamy Subramanian	Large- and small-scale dynamos in galaxies: friends or enemies?
10:35 - 11:00	Rainer Beck	Small-scale and large-scale fields in spiral galaxies - results and issues from observations
11:00 - 11:25	Marijke Haverkorn	What are magnetic scales in the ISM? To what extent does the scale separation in galactic magnetic fields exist?
11:25 - 11:50	Anvar Shukurov	Mean-field dynamo theory and simulations
11:50 - 12:20		Discussion 1
12:20 - 12:50		<i>Lunch Break</i>
12:50 - 13:15	Sui Ann Mao	Galactic Magnetism with SKA
13:15 - 13:40	Axel Brandenburg	What are the expected observational signatures of galactic dynamos from simulations?
13:40 - 14:05	Rudiger Pakmor	The effect of magnetic fields in cosmological galaxy simulations
14:05 - 14:30	Ellen Zweibel	How do cosmic rays interact with magnetic fields in the multiphase ISM and what are related observational probes?
14:30 - 14:55	Petros Tzeferacos	Laser-driven experiments of magnetized turbulence: shining a new light on dynamo theory using high-powered lasers
14:55 - 15:30		Discussion 2

Links to pre-recorded talks:

(in an alphabetical order)

1. Radhika Achikanath Chirakkara -- Efficiency of the Small-Scale Dynamo in the Highly-Subsonic Regime
https://youtu.be/9E_g3Jw2IWY
2. James Beattie -- Nature of Magnetic Field Fluctuations Driven by Large-scale Supersonic Turbulence
<https://youtu.be/Wv-SSPNLu-U>
3. Shmuel Bialy -- Turbo-Chem: Constraining Interstellar Turbulence with Observations of Chemical Tracers
<https://youtu.be/8vVs818HgAk>
4. Alejandro S. Borlaff -- Magnetic Chaos Hidden in the Whirlpool Galaxy
<https://youtu.be/PIAqZqrGkHg>
5. Luke Chamandy -- Evolution of Galactic Magnetic Fields
<https://youtu.be/RL5N8bkfCf4>
6. Ralf-Jürgen Dettmar -- Cosmic Ray Electron Transport in Halos of Star Forming Disk Galaxies
<https://youtu.be/BED7NJAj8JE>
7. Forrest Glines -- Intermittently Driven Magnetized Turbulence Simulations
https://youtu.be/tu519l_M5MM
8. Philipp Grete -- As a Matter of Tension: Kinetic Energy Spectra in MHD Turbulence
<https://youtu.be/hmcGu7epSkg>
9. Lucas Grosset -- Extragalactic Magnetism with SOFIA (Legacy Program): Magnetic Fields in the Central Region of the Circinus Galaxy
https://youtu.be/Wc9Z-IN_wxE
10. Yue Hu -- Superdiffusion of Cosmic Rays in Compressible Magnetized Turbulence
<https://youtu.be/XWXwhMcUCW0>
11. Sebastian Hutschenreuter -- The Galactic Faraday Sky
<https://youtu.be/1HM33vWJbUM>
12. Neco Kriel -- Characteristic Length Scales of Magnetic Fields in the Small-scale Dynamo
<https://youtu.be/NTPm6fAa4vY>
13. Yuankang Liu -- A Sub-grid Turbulent Dynamo Model for Cosmic Magnetism
<https://youtu.be/qzCXTprhpDY>
14. Enrique Lopez-Rodriguez -- Extragalactic Magnetism Using Far-Infrared Polarimetry
<https://youtu.be/kB1PpjF184s>
15. Sergio Martin-Alvarez -- The Galactic Window to Primordial Magnetism
<https://youtu.be/AchBiaRudxQ>

16. Evangelia Ntormousi -- Global MHD Galaxy Simulations: The Impact of Feedback and the Emergence of a Mean-Field Dynamo
<https://youtu.be/cSYhwQ- sQA>
17. Ayush Pandhi -- Reconstructing the Galactic Magnetic Field with FRBs and AGN
<https://youtu.be/QINIpnyRwg>
18. Dylan Paré -- Modeling the Faraday Rotation Encountered Toward the Galactic Center Radio Arc
<https://youtu.be/6lf15O1DTdE>
19. Kate Pattle -- The Two-component Magnetic Field of M82
<https://youtu.be/ACRP83gN-jM>
20. Hilay Shah -- Magnetic Fields in Elliptical Galaxies
<https://youtu.be/SfgKvGHBzUo>
21. Russell Shanahan -- THOR's Perspective on Magnetism in the Inner Galaxy
<https://youtu.be/9R2Gz9TALsY>
22. Dimitry Sokoloff -- Dynamo in Galactic Accretion Discs
<https://youtu.be/-uEEZnBgjWg>
23. Ulrich Steinwandel -- Simulating Magnetic Field Amplification within Galaxies and Galaxy Clusters
https://youtu.be/H_5_8I2jD64
24. Devika Tharakkal -- Non-linear Magnetic Buoyancy Instability in Galaxies
<https://youtu.be/9Mj6VcIJvqs>
25. Le Ngoc Tram -- Probing dust grain alignment mechanisms in galaxies: M51 as the case study
<https://youtu.be/vxOenkuNS2k>
26. Siyao Xu -- Diffusion of Cosmic Rays in the Multi-phase Interstellar Medium
<https://youtu.be/o4Q7M6aZLOk>

Link to a YouTube playlist with all the talks:

https://youtube.com/playlist?list=PL8_XbF8cgCSXsabaFVHR2Klu0-kq8i2Lo