

Colloquium

SFB 956

Conditions and Impact of Star Formation

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Videostream

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Towards High-Precision Magnetometry in the ISM

A large-scale magnetic field permeates our Galaxy and is involved in a variety of astrophysical processes such as star formation and cosmic ray propagation. Dust polarization has been proven one of the most powerful observables for studying the magnetic field properties in the interstellar medium (ISM). However, it does not provide a direct measurement of its strength. Indirect methods have been developed, based on the assumption of equipartition between turbulent kinetic energy and fluctuating magnetic energy. However, these are rather inaccurate. In the era of large polarimetric surveys that will multiply the number of stars with measured polarimetric properties by a factor of 1000, it is important to find ways to mine high-accuracy information about magnetic field strengths from polarimetric data. In this talk, I will discuss how this is possible, by better accounting for the properties of interstellar medium magnetized turbulence.