

# PRISMA+ Colloquium

Jan. 10, 2024 at 1 p.m.  
Lorentz-Raum, 05-127, Staudingerweg 7

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## **Stars and Galaxies: a Pathway to the Dark Side of Fundamental Physics**

All the burning questions of the Standard Model such as the origin of dark matter, of the matter antimatter asymmetry, of neutrino masses, seem to invoke the presence of other, "dark" particles. But how do we look for these new particles? In this talk I advocate for the use of astrophysical objects as a laboratory to make progress on these puzzles. In particular, the referent will describe some ideas to use Supernovae and galaxy observations with line intensity mapping to shed some light on this darkness and probe motivated models such as axion-like particles, dark photons, light CP-even scalars. This effort is very timely, as it coincides with a broad set of astrophysical and cosmological observations becoming available now and in the near future.