

Space Science Seminar
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Dark matter signals from the Inner Galaxy?

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Dark matter makes up roughly 80% of the matter in the universe, yet the details of its particle nature remain unknown. Many particle dark matter candidates can pair annihilate or decay to produce Standard Model particles, including gamma rays, charged particles, and neutrinos. The detection of these indirect signals of the annihilation or decay of dark matter in our galaxy and beyond is a promising method for identifying dark matter, understanding its intrinsic properties, and mapping its distribution in the universe. Recent indirect searches with gamma rays have yielded several tantalizing hints of dark matter signals from the inner galaxy. However, a confident detection remains elusive. I will discuss these recent results and possible alternatives to the dark matter interpretation of the claimed signals, as well as new approaches and prospects for robustly identifying a dark matter signal in indirect searches with upcoming experiments.