

Dark Matter: where to search for it?

I will review the problem of dark matter and a class of particle physics candidates. I will discuss several examples that illustrate how a synergy between astrophysics, cosmology and particle physics may help us to understand where to go in this field. In particular, I will discuss fermionic Dark Matter (DM) candidates, that can be generally divided into wide classes of WIMPs and super-WIMPs. I will review what do we know about WIMP-like particles lighter than 5 GeV and relevant astrophysical and cosmological bounds, including constraints on DM self-interaction. I will discuss the perspectives of searches for DM annihilation signal with CTA and the role of systematic errors in these searches. Finally, I will mention a couple of interesting recent results about super-WIMPs.