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## **Detecting Particle Dark Matter Signatures by Cross-Correlating Gamma-Ray Anisotropies with Weak Lensing**

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Both gravitational lensing and cosmological gamma-ray emission stem from the presence of dark matter (DM) in the universe. Indeed DM structures are responsible for the bending of light due to the gravitational lensing effect, and those same objects can emit gamma rays, either because they host astrophysical sources or directly by particle DM annihilations/decays. Such gamma rays should therefore exhibit strong correlation with the gravitational lensing signal, correlation that can provide novel information on the composition of the extragalactic gamma-ray background (EGB). Here, I show that if the DM contribution to the EGB is significant enough, although compatible with current observational bounds, its strong correlation with gravitational lensing makes such signal potentially detectable by combining forthcoming gamma-ray and weak-lensing experiments. Moreover, I present results on the first evidence of the cross-correlation between gamma-ray data provided by the Fermi Large Area Telescope and lensing of the cosmic microwave background as measured by the Planck satellite.

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