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Looking to Dark Matter through gamma-ray anisotropies

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Anisotropies in the extragalactic electromagnetic emission originated from dark matter represent an emerging tool in the quest for a particle dark matter signal. These anisotropies are due to the cumulative emission from unresolved dark matter structures, which are present at any scale: galaxy clusters, individual galaxies, subhalos inside galaxies. The same structures can be probed by gravitational tracers of the dark matter distribution in the Universe: this is obtained by large-scale-structure surveys, but in the future a good wealth of additional and complementary information will be available from weak lensing surveys. The study of gamma-rays anisotropies and the cross-correlation between the dark matter signal and gravitational tracers offer a novel and potentially very powerful opportunity to probe the particle physics nature of dark matter. The talk will introduce details and features of gamma-rays anisotropies and give perspectives of the cross-correlation approach.

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