Title: **"Status of Indirect Dark Matter Detection"**

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Abstract

Indirect astrophysical channels such as gamma rays, neutrinos, cosmic ray antimatter remain a cornerstone for the dark matter particle identification program. First, I will review the rationale behind this search program.Then, I will present current indirect constraints on dark matter. I will stress on one important lesson we have learned in recent years: it is important to accounting for astrophysical "backgrounds", especially when moving from setting constraints in parameter space to the more challenging ambition of detection. Barring some exception, we are close to the limits of blind searches for indirect dark matter due to systematic limitations to our understanding of astrophysical backgrounds. As a general rule I will advocate a change of perspective in these searches, where guidance from collider and direct detection programs is exploited to perform a much more fruitful "a priori" search for correlated signatures in many indirect channels. However, to illustrate a possible exception to this, I will describe one recent puzzling claim, namely a tentative detection of gamma-ray lines of about 130 GeV from the Galactic Center Region, which is hard to explain with both astrophysical or dark matter models. Finally, I will present some historical insights on the caveats and opportunities for "surprising" discoveries via high energy astrophysics.