

Matching resummed endpoint and continuum gamma-ray spectra from dark-matter annihilation

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The annihilation of TeV electroweak dark matter is subject to large electroweak corrections due to the Sommerfeld effect. In addition, for indirect detection, large Sudakov logarithms of electroweak scale vs dark matter mass and energy resolution require resummation to obtain reliable results. Far away from the endpoint, the electroweak parton shower, such as PPC4DM, provide a more accurate description of the photon spectrum. In this talk, I will discuss the logarithmic structure of the electroweak parton shower and Sudakov resummed result and demonstrate how both can be merged to obtain photon spectra for all photon energies. Furthermore, I will demonstrate how electroweak resummation significantly changes the shape of the photon-energy spectrum in a wide range of energy and hence the form of the so-called “line-signal”.

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