



Contribution ID: 53

Type: **not specified**

## Dark Matter at future $e^+e^-$ colliders: chances of detection vs DM spin

*Wednesday 17 March 2021 07:40 (19 minutes)*

It is commonly believed that Dark Matter (DM) should exist in the form of new, Beyond-the-Standard-Model stable particles.

Such particles, however, have not yet been detected, which means that interactions between DM and SM must be very weak. Dark particles, even if they are already produced at existing colliders, evade detection due to tiny signal-to-background ratio.

Future  $e^+e^-$  colliders, providing large luminosity and collision energy as well as very clean collision environment (which means low background), can be especially useful in the search for dark particles.

In this talk, we will focus on comparison between expected signatures of dark particles of various spins produced in  $e^+e^-$  collisions. The analysis will be performed basing on simple, but QFT-consistent and fully renormalizable, models of one-component DM interacting with SM through the Higgs portal. Due to their simplicity, the models can serve as a first approximation of more complicated theories, even involving more than one dark component (given that one of DM species dominates). Apart of estimating chances of DM detection, we will try to determine under what circumstances the cases of different spins could be disentangled.

### Time Zone

Europe/Africa/Middle East

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**Session Classification:** PD1/PD3: Theoretical Developments / Physics Analyses

**Track Classification:** Physics and Detectors Tracks: PD1: Theoretical Developments