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Dark Matter Searches at Colliders

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Many new physics models like SUSY can have dark matter candidates. Collider experiment provides a unique approach search for dark matter candidates. Like neutrinos, dark matter candidates, once produced from high energy particle collisions, would escape from detection and leave a signature of missing energy. The production mechanism through effective field theory model, simplified model and UV-completed models have been proposed and searched. In addition, the mediator of interactions between dark matter and SM particles is another target which can be probed at collider experiments, which turn out to have a quite high sensitivity in some parameter space. In this talk, I will give an overview the strategy of collider search for dark matter and discuss the current experimental constraints. The collider's constraints can be combined with direct detection experiments to cover a large scope of dark matter parameter space.

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