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Collider Searches for Dark Matter in the Mono-Everything Search Channels

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Searches for dark matter at colliders typically involve signatures with energetic initial-state radiation without visible recoil particles. Searches for mono-jet or mono-photon signatures have yielded powerful constraints on dark matter interactions with Standard Model particles. I extend this to the mono-Z, W, and Higgs signatures and reinterpret ATLAS analyses of events with missing transverse momentum to derive constraints on the dark matter interaction mass scale and nucleon cross sections. Dark matter models are explored in the context of effective field theories describing interactions via weak scale mediator particles, and are compared to existing space-based searches for DM scenarios

Author: CARPENTER, Linda (Ohio State University)

Presenter: CARPENTER, Linda (Ohio State University)

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