

## Phenomenology 2022 Symposium: From Virtual to Real



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### Astrometric weak lensing constraints on dark matter substructure with Gaia EDR3

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In this work, we present updated results on an ongoing dark matter search using astrometric weak gravitational lensing. Following the analysis in Mondino et al. (2020), results are reported on a dark matter search using proper motions on stars in the Magellanic Clouds from Gaia's most recent data release. Additionally, we assess our method on star-star lensing, and introduce a parallax template method to aid in the dark matter search. Finally, we provide preliminary sensitivity estimates for an acceleration-based search for compact dark matter structures.

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