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1 > 12 June 2026

Beyond WIMPs: Theory and Model Building for the Next Generation of Dark Matter Searches

Multiple experiments and observations over the previous two decades have strongly constrained the “canonical WIMP” scenario, motivating increased theoretical efforts to study a wider array of potential dark matter candidates. Compared to previous efforts, these studies span a vast range of masses, couplings, cosmological effects and detection signatures; the current status of the field is more complex, but also much richer. Progress will require a detailed theoretical understanding of the many possible direct, indirect, cosmological and collider signatures of “beyond WIMP” models, as well as detailed methods for separating beyond standard model signatures from standard model foregrounds. This workshop will bring together leading topical experts spanning cosmology, particle physics, and astrophysics to: (1) better understand the future of dark matter model building, (2) produce novel probes that are better able to constrain well-motivated dark matter models, and (3) develop better cross-disciplinary techniques that probe novel dark matter parameter space. Our goal is to produce a theoretically-motivated roadmap that guides the next decade of experimental and observational dark matter searches.

Organizing committee

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Speakers include

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(Penn State University)

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