# THE PHYSICS COLLOQUIUM

Thursday 16 March 2023, 4:00 p.m.
Nijenborgh 4, Lecture Hall 5115.0317 (Schröderzaal)

# Light dark matter and dark sectors at accelerators


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Some of the most prominent empirical evidence for physics beyond the Standard Model, specifically for dark matter and neutrino mass, hints at an extended paradigm for fundamental matter and forces. A novel, yet plausible, element of this framework may be a hidden or dark sector of new particles, which do not experience the familiar strong and electroweak interactions. This framework becomes essential for models of light sub-GeV dark matter as a thermal relic, which is one of the simplest generalizations of the conventional WIMP as a candidate for dark matter.

The dark sector framework has been explored extensively over the past decade both theoretically and experimentally, including at a range of high-intensity, medium energy accelerators. In this talk I will review the basic theoretical framework of thermal relic dark matter, dark sectors, the portal interactions that mediate their coupling to the Standard Model, and highlight progress in the experimental accelerator-based program to probe the novel phenomena associated with these theories, including valuable synergy with neutrino experiments.


*Join us for coffee starting 3:30 p.m. Refreshments will be served after the lecture.*
*For more information contact the host: Else Starkenburg (e.starkenburg@rug.nl)*
*Website: http://www.rug.nl/research/vsi/colloquia/*