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## Topological Portal to the Dark Sector

*Wednesday 28 May 2025 16:00 (20 minutes)*

In this talk, I will present a unique topological portal between quantum chromodynamics (QCD) and a dark sector characterized by global symmetry breaking. This interaction uniquely connects three QCD pions to two dark pions, and when gauged, it emerges as the leading interaction between the two sectors. The resulting framework naturally gives rise to a compelling scenario of light thermal inelastic dark matter. The intrinsic antisymmetrization of the portal suppresses late-time annihilations and direct detection signals, while simultaneously predicting distinctive collider signatures with exciting discovery potential at Belle II. This presentation will be based on work done in collaboration with Joseph Davighi and Admir Greljo (arXiv:2401.09528). Additionally, I will explore possible ultraviolet completions of the topological portal and discuss their phenomenological implications.

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