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An Open Effective Field Theory for light in a medium

Wednesday 12 February 2025 13:45 (30 minutes)

Open effective field theories seek to incorporate dissipation and noise into our theoretical toolbox. These effects arise from the incomplete modelling of unknown components, which can significantly alter the dynamics of observable degrees of freedom. In this talk, I will introduce open electromagnetism, a sandbox for exploring gauge symmetries in open systems, which describes light in dielectric media. I will highlight how symmetries, locality, and UV unitarity impose constraints on dissipation and noise. Finally, I will outline a roadmap toward a description of open gravity in cosmology.

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