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Type: **Talk**

Causality in relativity, philosophy and causal modeling

Monday, 23 June 2025 11:10 (40 minutes)

In this talk, I will discuss the ways in which philosophical work on causation and physics research in quantum foundations can usefully inform and influence each other. I will introduce some important philosophical ideas about causation, including the asymmetry of causation and its relation to time-symmetry in macroscopic and microscopic physics. I will also discuss the causal modelling approach and its philosophical motivations. I will then discuss the notion of causation as it appears in the process matrix formalism, and argue that these results can help us understand type of causal or quasi-causal structure might be present in the microscopic world. I will comment on some important lessons for both philosophy and physics.

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