



ID de Contribution: 38

Type: **Oral presentation**

## The causal set approach to quantum gravity

*mercredi 2 novembre 2022 17:00 (15 minutes)*

Quantum gravity is one of the biggest riddle of our time. One approach to it is the Causal Set Theory (CST) that aims to unify the framework of General Relativity and Quantum Mechanics by the concept of proto-causality. We will explore how the classical spacetime continuum can emerge from the discrete structure of a network of fundamental elements, and how reasoning at this smallest scale of reality gives insights on new notions of kinematics and dynamics. This paradigm has the potential to explain the interactions of strong gravitational fields with quantum fields, is useful for computations, and even show an explanatory potential for some objects in cosmology and philosophy.

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**Classification de Session:** Oral Presentations (second in the afternoon)