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NITheCS WEBINAR:

Phenomenology of a minimal measurable length

Dr Pasquale Bosso (Italian Institute for Optics, Italy)

Friday, 28 June 2024 | 14h00 – 15h00 SAST

Attend online

ABSTRACT

A common prediction of candidates theories of quantum gravity is the existence of a minimal measurable length, typically of the order of the Planck length. In phenomenological approaches, this is often implemented in quantum mechanics by deforming the ordinary uncertainty relation between position and momentum and the corresponding commutation relation. As a consequence of such deformations, the kinematical structure of such phenomenological models acquires a richer and more intricate description than the ordinary counterpart. In this seminar, I will describe some of the features and implications characterising the phenomenological models of a minimal measurable length in quantum mechanics.

BIOGRAPHY

Pasquale Bosso was awarded his PhD in Theoretical Physics at the University of Lethbridge in Canada in 2018. Since then, he has worked on Quantum Gravity Phenomenology, with a particular focus on the phenomenology of a minimal length as predicted by theories of quantum gravity.

In 2018, he moved to León, Guanajuato, in Mexico, for a PostDoc position at the University of Guanajuato and the year after he returned to the University of Lethbridge as an Assistant Professor. In 2022, Dr Bosso moved to Italy as a postdoc researcher at the University of Salerno.

Currently, he is a researcher at the Italian Institute for Optics (INO) of the National Research Council (CNR) in Italy, where he is conducting experimental research on quantum-correlated twin beams. At the same time, he is continuing his work on quantum gravity phenomenology with the intent to find potentially observable evidences of a minimal measurable length.

ZOOM LINK TO ATTEND

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