

S E M I N A R



Dr Adrià Delhom i Latorre
(Universidad Complutense de Madrid,
Spain)

Date:

Monday, 17 November 2025

Time:

15h00-16h00 SAST

Venues:

- P213, Physics Building,
East Campus, WITS
- Online

Who should attend?

All are welcome!

Enquiries:

Email Farah-Naaz Samuels:
farah-naaz.samuels@wits.ac.za

Quantum Simulators as Probes for Vacuum Entanglement in Quantum Field Theory

ABSTRACT:

The vacuum state in relativistic quantum field theories has been shown to be surprisingly rich. In this talk, we will introduce entanglement between local degrees of freedom of relativistic quantum field theories, discussing recent predictions on the topic. We will then outline a proposal to access these predictions in the laboratory using quantum fluid experiments.

Adrià Delhom i Latorre is a postdoctoral researcher at the Universidad Complutense de Madrid (Spain).

He received his BSc, MSc, and PhD in Physics from the University of València (Spain). During this time he also carried out research stays in Brazil, the USA, France, and Germany. His PhD focused on the theoretical and observational aspects of modified gravity theories, with particular emphasis on metric-affine gravity. His results earned him a national interdisciplinary award from the Spanish National Research Council.

Following his PhD, Adrià joined the University of Tartu (Estonia) as a postdoctoral researcher, continuing his work on modified gravity. He then moved to Louisiana State University (USA) for his next postdoctoral position, where he developed an interest in analogue gravity and entanglement in relativistic quantum field theories. His research at LSU combined theoretical modelling with the design of experimental setups to test predictions in quantum fluids.

Adrià has expanded his work to include hydrodynamics in minisuperspace. He will begin his next postdoctoral appointment as a Marie Skłodowska-Curie Fellow at Sorbonne Université.

REGISTER: <https://bit.ly/4p40xzV>

