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CENTRO DE I&D EM MATEMÁTICA E APLICAÇÕES  
CENTER FOR R&D IN MATHEMATICS AND  
APPLICATIONS

# Gravitational Geometry and Dynamics Group Seminar

Wed. 15<sup>th</sup> March '23 Online at 15h00

## Minimum length scale and quantum black holes

**Roberto Casadio**

Bologna University and INFN

**Zoom meeting ID 962 2413 8340**

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The idea that gravity can act as a regulator of UV divergences is rather old and has inspired various approaches to quantum gravity, like the Generalised Uncertainty Principles. We will show that the effective field theory of the Einstein gravity on a fixed background naturally leads to a minimum Planckian scale for scattering processes and that a possibly much larger width for the ground state appears in the (non-perturbative) quantisation of the Oppenheimer-Snyder model of dust collapse. The effective geometry for such quantum black holes can finally be given in terms of coherent states.

[https://videoconfcolibri.zoom.us/j/96224138340?](https://videoconfcolibri.zoom.us/j/96224138340?pwd=YkZUMGILb0dqVjcxOVpXMTFVMTBxQT09)

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*about us gravitation.web.ua.pt*

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