



universidade
de aveiro



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

Gravitational Geometry and Dynamics Group Seminar

Wed. 21st September '22 Online at 14h30

New mechanism of primordial black hole formation during reheating

Luis Padilla

UNAM, Mexico

Zoom meeting ID 962 2413 8340

passcode: ask to annulli@ua.pt - herdeiro@ua.pt

In this talk, we consider a scenario in which an extended reheating scenario can be described analogously to the so-called scalar field dark matter model. We explore the possibility of primordial black holes (PBHs) forming from the gravitational collapse of either the structures virialized during reheating (referred as inflaton halos or inflaton clusters), or from the collapse of the central core of these configurations (referred as inflaton stars). We compute the threshold amplitude for the density contrast to undergo this process, for both the free and self-interacting scalar fields. We discuss our results in light of the constraints to PBHs abundances at the lower end of the mass spectrum and apply our findings to an example inflationary scenario.

[https://videoconcolibri.zoom.us/j/96224138340?](https://videoconcolibri.zoom.us/j/96224138340?pwd=YkZUMGILb0dqVjcxOVpXMTFVMTBXQT09)

[pwd=YkZUMGILb0dqVjcxOVpXMTFVMTBXQT09](https://videoconcolibri.zoom.us/j/96224138340?pwd=YkZUMGILb0dqVjcxOVpXMTFVMTBXQT09)

about us gravitation.web.ua.pt

The Gr@v seminars are supported in part by the FCT - Portuguese Foundation for Science and Technology, through CIDMA - Center for Research and Development in Mathematics and Applications, within project UIDB/04106/2020 and UIDP/04106/2020

FCT

Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

