

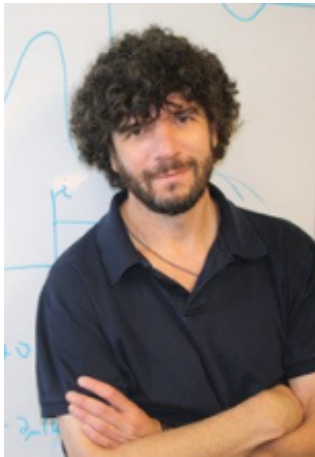


**FZU**

Institute of Physics  
of the Czech  
Academy of Sciences

## Invitation

to the seminar of Division of Elementary Particle Physics of the  
Institute of Physics of the Czech Academy of Sciences



### Prof. Julio F. Navarro

University of Victoria,  
Victoria BC, Canada

## Going Non-Linear: Contrasting LCDM with the internal properties of galaxies

**Abstract:** The Lambda Cold Dark Matter (LCDM) paradigm has been spectacularly successful at reproducing observations of the cosmic microwave background and of the large-scale structure of the Universe. On these scales, the structures contrasted with the theory are in the linear or mildly non-linear regime, where observations are well established and theoretical predictions are robust. LCDM also makes specific predictions in the non-linear regime; in particular, for the evolution, abundance, structure, and substructure of dark matter halos, the sites of galaxy formation. On these non-linear scales a number of potential challenges to LCDM have been identified when confronting the observed internal structure of galaxies with LCDM expectations. I plan to review briefly the status of these challenges and to discuss whether they signal a potential breakdown of the LCDM paradigm or just reflect our incomplete understanding of the complex process of galaxy formation.

**When:** Tuesday, June 13, 2023 at 2PM

**Where:** SOLID21 lecture hall, Institute of Physics, Na Slovance 2, Prague 8

For more information, please see <https://indico.fzu.cz/event/139/>