



The Warsaw Doctoral School in Natural and Biomedical Sciences and
the Center for Theoretical Physics PAS cordially invites you to a
SPOTLIGHT TALK

***Theoretical and observational challenges in the
study of the late Universe***

given by

prof. Adi Nusser

Technion University Haifa, Israel

on 6st June 2024, 17:00

at the Center for Theoretical Physics PAS, al. Lotników 32/46,
Auditorium

Duration: 90+ min

All Warsaw-4-Phd students (and others) are very welcome!

Abstract:

Galaxies form at the peaks of the dark matter density fields, and as such, their spatial distribution is correlated with the dark matter density field, albeit not in a straightforward relationship. In contrast, by virtue of the equivalence principle, galaxy peculiar motions (deviations from a pure Hubble flow) faithfully trace the dark matter flow across large scales, away from regions affected by stellar and AGN feedback (such as supernova explosions and the ejection of energy via accretion onto galactic supermassive black holes).

The lecture will focus on the challenges in extracting cosmological information on the nature of dark matter, dark energy, and the fundamental theory of gravity from observations of the galaxy distribution and peculiar motions in the late Universe (within a few hundred Megaparsecs from us). It will review a few of the key analysis methods developed over the years and delve into the use of AI/ML, addressing the question of whether this methodology will eventually replace previous tools.

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