

**Seminarium Studium Doktoranckiego NCBJ**  
**Thursday, 14 November, 9:00**  
**Sala 404 w NCBJ, Pasteura 7**

Speaker:

Jaime de Cabo Martín (Studium Doktoranckie NCBJ)

Title:

**CONSTRAINING THEORIES OF GRAVITY THROUGH ASTROPHYSICAL DATA:  
ΛCDM VS. MOND AND EXTERNAL FIELD EFFECT.**

Abstract:

One of the most important issues of modern physics are the discrepancies between the observations of galactic and extragalactic systems by astronomical means and the predictions of General Relativity. One might think that the failure in explaining the dynamics in different systems could be caused by some change in gravitational physics (such as “MONDian” theories) without the need for a dark sector (the most accepted scenario). In this talk that issue will be regarded as follow: the first part will be an introduction establishing the principles and basis to analyze the results presented later in our work. After that, we will explain the theoretical and observational framework necessary to interpret the showed data. Then, we will show the main observational data for different systems, followed by the analysis of the relevant astrophysical data for each one, based in different articles, and their understanding oriented to clarify the need or not of a modified regimen, with or without an External Field Effect. Finally, we will try to summarise the concepts we have been able to deduce from the observational constrains, mentioning possible solutions in order to advance in that direction.