



Universidad
del País Vasco

Euskal Herriko
Unibertsitatea

EHU QC

EHU Quantum Center

Theoretical Physics Seminar Series

Using Numerical Relativity to Simulate Astrophysical and Cosmological Spacetimes

Matthew Elley

UPV/EHU

Abstract: Due to their complexity, solving Einstein equations by hand tends to necessitate the presence of a high degree of symmetry and/or significant approximations of the system being studied. This leaves one at a disadvantage when trying to understand a vast range of gravitational phenomena. Fortunately, it is possible to re-formulate Einstein equations - and even modifications thereof - such that they can be solved efficiently on computers. The techniques and practices that have been developed for this task form the bedrock of Numerical Relativity. I will give a brief overview of the subject, and demonstrate its application in both astrophysical and cosmological settings using my previous work as examples.

Prof. A. Chamorro Seminar Room, Theoretical Physics Seminar Room

Thursday, May 2nd, 2024

Time: 11:40 pm