Contribution ID: **60** Type: **talk**

Gravitational waves from a curvature-induced phase transition of a Higgs-portal dark matter sector

Thursday 4 September 2025 11:55 (20 minutes)

Our latest study (2407.18845) investigates the possibility of generating gravitational waves (GWs) from a curvature-induced phase transition of a non-minimally coupled scalar dark matter field with a Higgs-portal. This analysis is conducted during the transition from inflation to kination for various inflationary scales, considering both positive and negative values of the non-minimal coupling, while also examining the potential for triggering Electroweak symmetry breaking. Notably, kination enhances the GW amplitudes, significantly restricting the viable parameter space. While the GW spectra are high-frequency for high-scale inflation, certain regions of the parameter space allow for a potential detection with future experiments.

Primary author: MANTZIRIS, Andreas (University of Coimbra)

Co-author: Prof. BERTOLAMI, Orfeu (University of Porto)

Presenter: MANTZIRIS, Andreas (University of Coimbra)

Session Classification: Morning