



SEMINARIO

GRUPO FÍSICA DE ALTAS ENERGÍAS

**"Type-I two-Higgs-doublet model and
gravitational waves from domain walls bounded by strings"**

Dr. Moinul Hossain Rahat

(Instituto de Física Corpuscular, Univ. de Valencia, España)

Abstract

The spontaneous breaking of a $U(1)$ symmetry via an intermediate discrete symmetry may yield a hybrid topological defect of domain walls bounded by cosmic strings. The decay of this defect network leads to a unique gravitational wave signal spanning many orders in observable frequencies, that can be distinguished from signals generated by other sources. We investigate the production of gravitational waves from this mechanism in the context of the type-I two-Higgs-doublet model extended by a $U(1)R$ symmetry, that simultaneously accommodates the seesaw mechanism, anomaly cancellation, and eliminates flavour-changing neutral currents. The gravitational wave spectrum produced by the string bounded-wall network can be detected for $U(1)R$ breaking scale from 10^{12} to 10^{15} GeV in forthcoming interferometers including LISA and Einstein Telescope, with a distinctive f^3 slope and inflexion in the frequency range between microhertz and hertz.

MIÉRCOLES 3 de Julio de 2024

a las 14:30 hrs. (Chile Continental)

Join Zoom Meeting

<https://reuna.zoom.us/j/87161425888?pwd=MWFZUFNQRnI4MXo1QzFLdGpJblllZz09>

**ID de reunión: 871 61425888
Código de acceso 100126**