Seminarium Szkoły Doktorskiej NCBJ

Thursday, 28 October, 9:00

https://www.gotomeet.me/NCBJmeetings/phd-seminar

Speaker:
Paritosh Verma (Studium Doktoranckie NCBJ)

Title:
Probing GWs from pulsars in Brans-Dicke theory

Abstract:

I shall discuss the results of our recent paper on gravitational waves (GWs) from spinning neutron stars in Brans-Dicke (BD) theory. The BD theory attempts to modify the GR by varying gravitational constant G, and it has three polarization states. The first two states are the same as in GR, and the third is scalar polarization. We derive the response of a laser interferometric detector to the GW signal from a spinning neutron star in BD theory. We obtain a statistic based on the maximum likelihood principle to identify the signal in BD theory in the detector's noise. This statistic generalizes the well known F-statistic used in the case of GR. We perform Monte Carlo simulations in Gaussian noise to test the detectability of the signal and the accuracy of estimation of its parameters. Finally, I shall present the total power radiated away in this theory and analytical formula to obtain the maximum limit of dipole amplitude.