

Impact of solar-system ephemeris imperfections on Pulsar Timing Arrays results using INPOP data

jeudi 15 octobre 2020 12:15 (15 minutes)

Pulsar Timing Array (PTA) projects aim at detecting a very low-frequency gravitational wave stochastic background (GWB) by probing its imprints in times of arrival (ToAs) of radio signals from pulsars. The expected signature is characterized by a quadrupolar angular correlation between positions of pulsars in the sky. The pulsar timing data reduction involves a transformation of geocentric ToAs to the quasi-inertial solar system barycenter (SSB) frame. PTAs sensitivity to the GWB requires to take into account a possible statistical and systematic errors in the SSB position derived from the planetary ephemeris solutions. If those errors are present and ignored, they produce a signal with a dipolar angular correlation that could “leak” into the GWB measurement. I will present the current status of my work (in collaboration with the group from GEOAZUR/IMCCE) on optimization of the search for a GW stochastic background accounting for planetary ephemeris uncertainties using INPOP (Intégrateur Numérique Planétaire de l’Observatoire de Paris) data.

Si vous préférez participer SEULEMENT en ligne, veuillez l’indiquer ci-contre

Author: M. CHALUMEAU, Aurélien (APC/USN)

Orateur: M. CHALUMEAU, Aurélien (APC/USN)

Classification de Session: Groupe de travail: Méthodes d’analyse des données