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Colloquium of the Physics Department of ENS

Mardi 11 Juin 2019, 17 :15
LPENS, Salle Jaures
Domaines : astro-ph

Titre : *The chaotic motion of the solar system beyond its horizon of predictability.*

Orateur : **Jacques Laskar (Observatoire de Paris)**

Résumé : *Since the numerical simulations of the past decades, we now know that the motion of the solar system is chaotic with an exponential divergence increasing the uncertainty in the computations by a factor of 10 every 10 millions of years (Ma). Due to the perturbation of the minor planets Ceres and Vesta, the horizon of predictability of the orbital solutions is limited to about 60 Ma, while our latest solutions should be valid over about 50 Ma. These solutions have been used for the time calibration of sedimentary records and the establishment of geological time scales, using the correlation between the computed variation of insolation on Earth and the recorded sedimentary imprint of the resulting climatic variations. I will discuss the possibility to extend these works beyond the horizon of predictability of 60 Ma imposed by the chaotic variations of the orbits.*