



Irfu

Institut de recherche
sur les lois fondamentales
de l'Univers

**Séminaire
DPhP**

Lundi 24/02/2020, 11h00

CEA-Saclay Bât. 141, salle André Berthelot

Fundamental physics and geodesy with atomic clocks

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At the beginning of the 20th century the theories of special and general relativity were developed by Einstein and his contemporaries. These physical theories revolutionize our conceptions of time and of the measurement of time. The atomic clocks, which appeared in the 1950s, are so accurate and stable that it is now essential to take into account many relativistic effects. The development and worldwide comparisons of such atomic clocks allowed for some of the most stringent of fundamental physics, as well as new ideas for the search of dark matter, which I will present in this talk. On a more applied level, when taking general relativity for granted, distant comparisons of atomic clocks can be used for navigation and positioning, as well as the determination of the geopotential. I will show how the chronometric observables can fit and be used within the context of classical geodesy.

Le café sera servi 10 minutes avant.

NB : La présentation d'une pièce d'identité est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance Martine Oger, tél. 01 69 08 23 50, e-mail : martine.oger@cea.fr. (délai de 7 jours).