

SEMINARIO

Giovedì 26 gennaio 2017 ore 15.00
presso INFN - Sezione di Pisa

Largo B. Pontecorvo, 3 – Edificio C
Aula 131 (edificio C – piano terra)

Dott. Jan Harms
(Urbino University)

Terrà un seminario dal titolo

"Terrestrial Gravity Fluctuations"

Abstract:

The terrestrial gravity field fluctuates, for example, due to pressure changes in the atmosphere or due to mass redistribution during earthquakes. Today, such gravity fluctuations can be observed up to frequencies of a few mHz with superconducting gravimeters. At higher frequencies, they contribute as noise, the so-called Newtonian noise, in the gravitational-wave detectors LIGO and Virgo, potentially limiting their sensitivity between about 10Hz and 30Hz. In addition, it was recently argued that fluctuations caused by earthquakes could be detected within seconds by a new generation of gravity gradiometers with a potential application in earthquake early warning. Here we will review our current understanding of terrestrial gravity fluctuations above 10mHz. We present the main strategies to reduce gravity noise in gravitational-wave detectors, and discuss the benefits of using gravity gradiometers with improved sensitivity for earthquake-early-warning systems.