



Avviso di Seminario

**Lunedì 30 maggio 2016
ore 15:30**

Dr. Rahul Kumar
(KEK - Tsukuba JAPAN)

Terrà un seminario dal titolo:
**"KAGRA detector: Large Scale Cryogenic
Gravitational Wave Telescope"**

Abstract:

KAGRA detector is a 2nd generation, large-scale cryogenic gravitational wave telescope (LCGT), currently being built in Japan for the detection of gravitational waves. The arm-length of this interferometric gravitational wave detector is 3 km and is located 200 m underground in the Kamioka mine (at Kamioka village near Toyama city). KAGRA is a cryogenic temperature detector (mirrors and its suspension called cryogenic payload will be cooled to 20 K) which is unique when compared to other room temperature detectors around the world. Operating the detector at cryogenic temperature will reduce the thermal noise in the suspension (mirrors) and allow the instrument to achieve very high sensitivity which is essential to define the emerging field of gravitational wave astronomy. The cryogenic payload for KAGRA is in the form of multiple pendulum, housed in a cryostat (with four cryo-cooler units) operating at 20 Kelvin. The use of sapphire (Al_2O_3) as a substrate material for the suspension system is the baseline design for the KAGRA detector. Sapphire is a crystalline material and is an ideal candidate at low temperature since it exhibits extremely low mechanical loss and shows several benefits including good optical properties, high thermal conductivity and high Young's modulus.

Sala Riunioni - Dipartimento di Fisica

Il Direttore
Prof. Maurizio Busso