

AVVISO DI SEMINARIO

Venerdì 24 Maggio 2019 alle ore 11:30

presso l'Area della Ricerca di Pisa, Aula 33, Edificio A, Piano terra

Il Dr. Antonio Vigilante

Dipartimento di Fisica, Università di Siena (Italy)

terrà un seminario sul tema:

Optical magnetometry: principles and presentation of a magnetometer operating in unshielded environment

Abstract

Optical Magnetometry can be exploited to perform high sensitivity measurements using low cost experimental apparatus. Despite this research field is active since a long time --first theoretical and experimental studies started in 1960s-- nowadays it finds a renewed interest, also thanks to advances in laser technology and numerical data elaboration.

The multiplicity of configurations available to perform magnetic measurements using atoms opens to various applications in field such as fundamental physics, nuclear magnetic resonance, geophysics, security and environment.

The talk is divided in two main parts. The first is about the principles of optical magnetometry focusing on most used set-up. The latter presents more specifically the unshielded optical magnetometer developed in our laboratory; focusing on our efforts to increase instrumental sensitivity and to attempt magnetic resonance imaging measurements.