Contribution ID: **11** Type: **talk**

The LAG experiment

Tuesday, 19 February 2019 16:52 (17 minutes)

In a laboratory gravitational experiment one of the most critical elements is represented by the source of the gravitational field. For state-of-art measurements, a precise characterization of the field and the possibility to modulate the amplitude are needed. Usually one or more moving masses are used. We describe a new actuation technique for gravity experiments based on a liquid Field Mass. The basic idea is to modulate the gravity force acting on a test mass by controlling the level of a liquid in a suitable container. This allows us to produce a periodically varying gravity force without moving parts (apart the liquid level) close to the Test Mass. Italian INFN (National Institute of Nuclear Physics) has recently funded a R&D experiment, named LAG (Liquid Actuated Gravity) to test principle of operation and performance of the liquid gravity actuator. We will describe in detail the most relevant aspects of the experiment and discuss how it can be used in gravity measurements. In particular we analyse a proposed application for improving test of the inverse square law in the mm to cm region.

Summary

Primary authors: Dr DI FIORE, Luciano (INFN - Napoli); Prof. BASSAN, Massimo (INFN- Roma Tor Vergata and Dipartimento di Fisica, Università di Roma "Tor Vergata"); Dr DE ROSA, Rosario (INFN-Napoli and Dipartimento di Fisica, Università di Napoli "Federico II"); Prof. GARUFI, Fabio (INFN-Napoli and Dipartimento di Fisica, Università di Napoli "Federico II"); Dr GRADO, Aniello (INFN-Napoli and INAF - Osservatorio Astronomico di Capodimonte, I-80126 Napoli, Italy); Dr MINENKOV, Yury (INFN -Roma Tor Vergata); Prof. PUCACCO, Giuseppe (INFN- Roma Tor Vergata and Dipartimento di Fisica, Università di Roma "Tor Vergata"); Dr VISCO, Massimo

Presenter: Dr DI FIORE, Luciano (INFN - Napoli)

Session Classification: Gravity Experiments

Track Classification: Gravity: Experiments