

LABORATORI NAZIONALI DEL GRAN SASSO

SEMINAR ANNOUNCEMENT

On **October 30, 2008**, at **2:30 pm**, **Stephen L. Adler** from **Institute for Advanced Study, Princeton, USA**, will give a seminar entitled:

**“Implications of Planet-Bound
Dark Matter”**

Abstract

I discuss the possibility that there may be dark matter gravitationally bound to the earth and other planets, and some of its implications.

First, from comparing lunar ranging with geodetic satellite and asteroid ranging data, I find an upper bound on the total mass of dark matter bound to the earth between the moon's and the geodetic satellite's orbit. Second, I give a detailed discussion of whether non-gravitational scattering of nucleons from dark matter can account for the "flyby anomaly", the unexplained velocity changes observed for spacecraft placed in flyby trajectories passing by the earth.

Finally, I speculate on whether planet-bound dark matter can explain certain peculiar features of the internal heat production of the Jovian planets.

(“B. Pontecorvo” room)