



Contribution ID: 373

Type: **Parallel contribution**

## Daily Modulation of the Dark Matter Signal in Crystalline Detectors

*Friday, 12 August 2011 09:40 (20 minutes)*

The channeling effect in crystals refers to the orientation dependence of charged ion penetration in crystals. In direct dark matter crystalline detectors, a channeled ion recoiling after a collision with a WIMP gives all its energy to electrons. Thus channeling increases the ionization or scintillation signal expected from a WIMP. Channeling is a directional effect which depends on the velocity distribution of WIMPs in the dark halo of our Galaxy and could lead to a daily modulation of the signal. I will present estimates of the expected amplitude of the daily modulation in direct dark matter detectors, both due to channeling and just due to the rotational velocity of the Earth around itself.

**Primary author:** Ms BOZORGNIA, Nassim (UCLA)

**Co-authors:** Prof. GELMINI, Graciela (UCLA); Prof. GONDOLO, Paolo (University of Utah)

**Presenter:** Ms BOZORGNIA, Nassim (UCLA)

**Session Classification:** Particle Astrophysics and Cosmology

**Track Classification:** Particle Astrophysics and Cosmology