

De *Madrid* al *Cosmos*

Indirect searches of TeV Dark Matter at the Galactic Center

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Abstract: I will discuss several aspects of the indirect search of Dark Matter (DM) at the Galactic Center (GC). I will show that the gamma-ray flux observed by HESS from the J1745-290 GC source is well fitted as the secondary gamma-rays photons generated from DM annihilating into Standard Model particles in combination with a simple power-law background. The model independent fits are performed for all the possible channels of annihilation. The best fits are obtained for WIMP masses above ~ 10 TeV. They require an enhancement factor of $\sim 10^3$ and a background spectral index compatible with the Fermi-LAT data. I will investigate the possibility that the expected enhancement may be related with hydrodynamics in N-body simulation or a possible DM spike induced by the Super Massive Black Hole. I will also discuss the possibility that the latter could be related with the spatial tail detected in the gamma-ray signal by HESS II in 2015. These TeV DM masses are practically unconstrained by direct detection searches or colliders experiments, but they can be tested with the observations of other cosmic-rays.

Jueves 13 de octubre, 15:00 h.
Sala de Conferencias
CFMAC-CSIC (Serrano, 121)

Ciclo de seminarios organizado conjuntamente por los grupos

- *Teorías Efectivas en Física Moderna* (UCM)
- *Gravitación y Cosmología* (IEM-CSIC)

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