

Gravitino Dark Matter



Michael Greife

Departamento de Física Teórica
Instituto de Física Teórica UAM/CSIC
Universidad Autónoma de Madrid



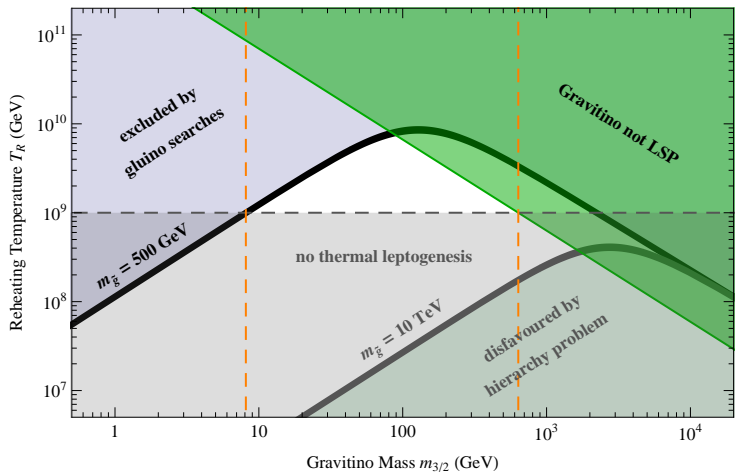
IFT/UAM Dark Matter Meetings

13 February 2013



Cosmology of Gravitino Dark Matter

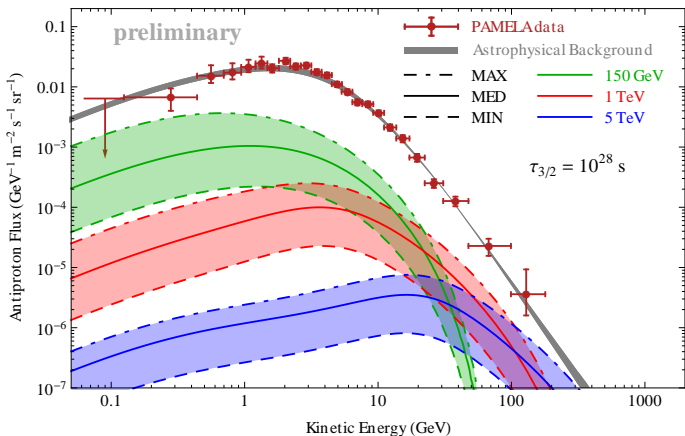
- ▶ Gravitino produced thermally in the early universe



- ▶ No WIMP miracle but gravitino can have correct dark matter relic density

Gravitino Decay Signals: Cosmic-Ray Antiprotons

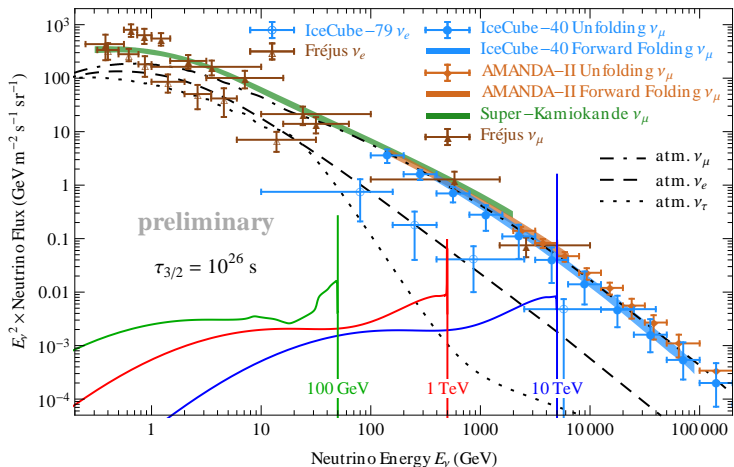
- ▶ Gravitino dark matter decay could be observed in cosmic-ray spectra



- ▶ Strongest constraints on lifetime from antiprotons and gamma rays

Gravitino Decay Signals: Cosmic-Ray Neutrinos

- ▶ Gravitino decay produces neutrino line



- ▶ Signal buried in atmospheric neutrinos, but data situation improving