Contribution ID: **190** Type: **Parallel session talk**

Quantum Gravity Effects on Dark Matter and Gravitational Waves

Friday 19 July 2024 17:15 (15 minutes)

We explore how quantum gravity effects, manifested through the breaking of discrete symmetry responsible for both Dark Matter and Domain Walls, can have observational effects through Dark Matter indirect detections and gravitational waves. To illustrate the idea we consider a simple model with two scalar fields or one fermion field plus one scalar field, together with two Z_2 symmetries, one being responsible for Dark Matter stability, and the other spontaneously broken and responsible for Domain Walls, where both symmetries are assumed to be explicitly broken by quantum gravity effects. We show the recent gravitational wave spectrum observed by several pulsar timing array projects can help constrain such effects.

Alternate track

1. Dark Matter Detection

I read the instructions above

Yes

Authors: WHITE, Graham (Southampton); YAMAZAKI, Masahito (University of Tokyo); ROSHAN, Rishav (Indian Institute of Technology Guwahati); Prof. KING, Stephen F (University of Southampton); WANG, Xin (University of Southampton)

Presenter: WANG, Xin (University of Southampton)

Session Classification: Astro-particle Physics and Cosmology

Track Classification: 08. Astro-particle Physics and Cosmology