



Canadian Association
of Physicists

Association canadienne
des physiciens et physiciennes

Contribution ID: 4108

Type: **Invited Speaker / Conférencier(ère) invité(e)**

Dark matter annihilation signals from simulated dwarf spheroidal galaxies

Thursday 30 May 2024 08:15 (30 minutes)

Dwarf spheroidal galaxies are ideal candidates for indirect dark matter searches. They are dark matter dominated and usually contain no intrinsic astrophysical sources of gamma ray emission. In order to accurately predict the dark matter annihilation signal from dwarf spheroidal galaxies, it is crucial to correctly model the phase space distribution of dark matter in them. Hydrodynamical simulations of galaxy formation provide important information on the dark matter distribution in dwarf spheroidal analogues. I will present the dark matter density profile and velocity distribution of Milky Way's dwarf spheroidal galaxies extracted from state-of-the-art hydrodynamical simulations, with a focus on the Sagittarius dwarf spheroidal galaxy. I will also discuss the implications for indirect dark matter searches from dwarf spheroidal galaxies for velocity-dependent dark matter annihilation models.

Keyword-1

dark matter

Keyword-2

cosmological simulations

Keyword-3

indirect detection

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Session Classification: (DTP) R1-2 Astrobiology, Astrophysics and Cosmology | Astrobiologie, astrophysique et cosmologie (DPT)

Track Classification: Technical Sessions / Sessions techniques: Theoretical Physics / Physique théorique (DTP-DPT)