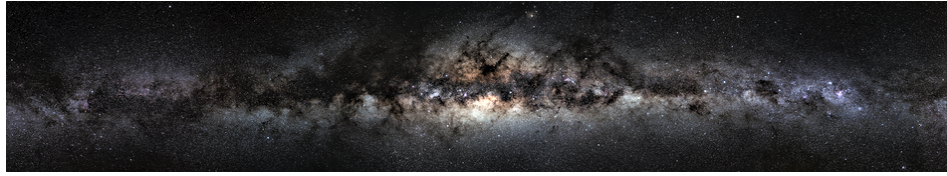


Dark Sectors of Astroparticle Physics (AstroDark-2021): Axions, Neutrinos, Black Holes and Gravitational Waves



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Type: **Poster**

Axiogenesis From $SU(2)_R$ Phase Transition

Tuesday, 7 December 2021 08:20 (30 minutes)

The baryon asymmetry of the universe may be explained by rotations of the QCD axion in field space and baryon number violating processes. We consider the minimal extension of the Standard Model by a non-Abelian gauge interaction, $SU(2)_R$, whose sphaleron process violates baryon number. Assuming that axion dark matter is also created from the axion rotation by the kinetic misalignment mechanism, the mass scale of the $SU(2)_R$ gauge boson is fixed as a function of the QCD axion decay constant, and vice versa. Significant portion of the parameter space has already been excluded by new gauge boson searches, and the high-luminosity LHC will further probe the viable parameter space.

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