Canadian Association of Physicists
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Contribution ID: **1948** Type: **Invited Speaker / Conférencier(ère) invité(e)**

Chiral Gravitational Waves and Baryon Superfluid Dark Matter (I)

Wednesday, 13 June 2018 16:00 (30 minutes)

In this talk I will discuss a recently proposed model of "Dark Baryon Superfluid" dark matter. This scenario begins with a unified model of dark-genesis and baryogenesis, involving strongly interacting dark quarks, and utilizing the gravitational anomaly of chiral gauge theories. In these models, both the visible and dark baryon asymmetries are generated by the gravitational anomaly induced by the presence of chiral primordial gravitational waves. A concrete model realizing this is an SU(2) gauge theory with two massless quarks. In this model, the dark quarks condense and form a dark baryon charge superfluid (DBS), in which the Higgs-mode acts as cold dark matter. I will elucidate the essential features of this dark matter scenario and discuss its phenomenological prospects. Talk based on JCAP 1805 (2018) no.05, 003 [arXiv:1801.07255.]

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Session Classification: W4-3 Advances in Nuclear and Particle Physics Theory (DTP/PPD/DNP) | Progrès en physique nucléaire et en physique des particules théorique (DPT/PPD/DPN)

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