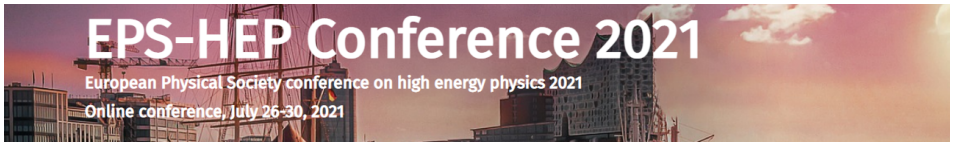

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Dark Matter in the Type Ib Seesaw Model

We study the connection between the two indications of physics beyond the Standard Model (SM): the masses and mixing of neutrinos and the existence of dark matter (DM). To have a more testable connection, we consider a minimal type Ib seesaw model instead of the traditional type I seesaw model. In the minimal type Ib seesaw model, the effective neutrino mass operator involves two different Higgs doublets and two right-handed neutrinos which form a single heavy Dirac pair. To account for DM, we consider neutrino portal couplings to a dark fermion and a dark scalar. We explore the parameter space of the extended model consistent with both oscillation data and DM relic abundance. Within this framework, we show how DM can be directly related to laboratory experiments when the heavy Diracneutrino mass is around 1~100 GeV.

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Collaboration / Activity

N/A

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