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Decaying heavy DM with RHN portals and dark gauge symmetry: PAMELA/AMS02, IceCUBE and KM3

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Some cosmic ray observations such as PAMELA/AMS02 positron excesses, and high energy neutrino events reported by IceCUBE and KM3 Collaborations may be interpreted as signals of heavy decaying dark matter (DM). In this talk, I will interpret them using heavy decaying DM with right-handed neutrino (RHN) portals with dark gauge symmetry,dark photon and dark Higgs boson. Including dark gauge symmetry and dark Higgs boson make difference in phenomenology, by opening new channels for the DM decays and helping to avoid stringent constraints from various indirect detection experiments.

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