

Synchrotron Emission from a Flavored Dark Matter Model as An Explanation of ARCADE-2 Excess

We explore the synchrotron signals generated by flavored Dark Matter candidate with mass region between 10-20 GeV annihilating into the leptonic channels e^+e^- and $\mu^+\mu^-$. In these models, the interactions are skewed in flavor space, so that a dark matter particle never couples directly to the Standard Model matter fields of the same flavor, but only to the other two flavors. So, these models can bring interesting results when analyzed as an attempt to explain the Radio observations at multiple frequencies, especially in the region between 22 MHz and 10 GHz, the well known ARCADE-2 Excess. We present the signal brightness temperature for a sort of frequencies considering the mass region of 10-20 GeV for the dark matter candidate and show that the analysed model can fit such excess. We also explore the model concerning the 21 centimetre-wavelength transition of atomic hydrogen around redshift 20, detected by the 21-centimetre signal as a dark matter explanation.

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