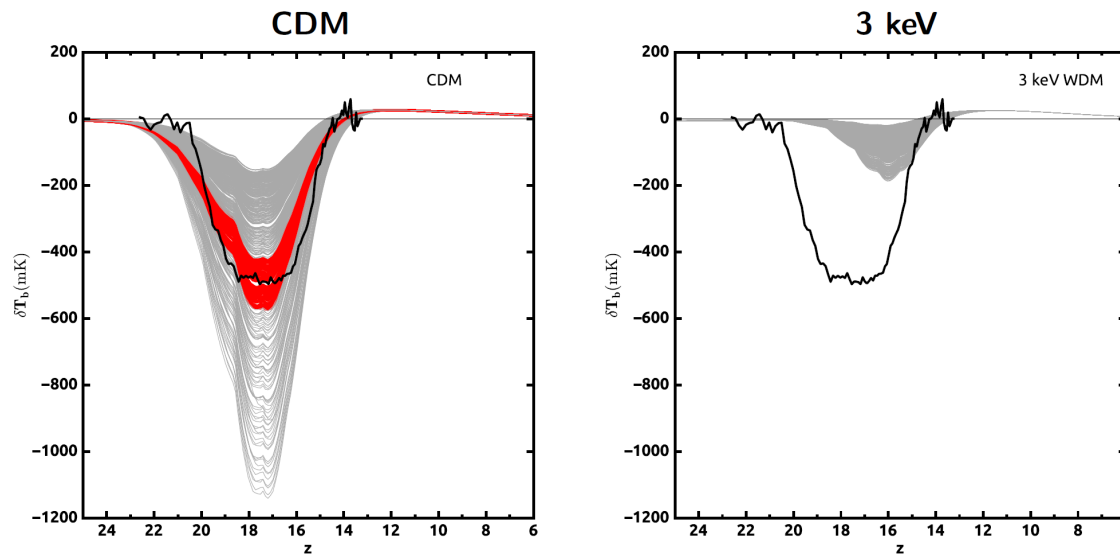


WDM models vs EDGES data



Observations require $m_{\text{DM}} \geq 3 \text{ keV}$ Chatterjee, Dayal, TRC & Hutter (2019)

Tirthankar Roy Choudhury

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Prof. Nishikanta Khandai Chair of the session on Cosmology and Astroparticle physics said “Prof. Tirthankar Roy Choudhury of NCRA reviewed the 21cm signal of Neutral Hydrogen as a probe of structure and galaxy formation and discussed features of the global 21cm signal since the dark ages $z > 40$ to today. He also discussed how the recent EDGES data can be used to put constraints on the dark matter mass after accounting conservatively for all astrophysical uncertainties. He showed that the EDGES data, if confirmed by other experiments - like the Indian effort SARAS-2, require that the mass of dark matter $m_{\text{DM}} > 3\text{keV}$. This shows that cosmological surveys and interpreting its data with theoretical models of structure formation are as important as particle physics experiments to better understand the nature of dark matter.”

Slides at: [https://www.niser.ac.in/daehep2020/talkposter/Tirthankar%20Roy Choudhury_803_793.pdf](https://www.niser.ac.in/daehep2020/talkposter/Tirthankar%20Roy%20Choudhury_803_793.pdf)