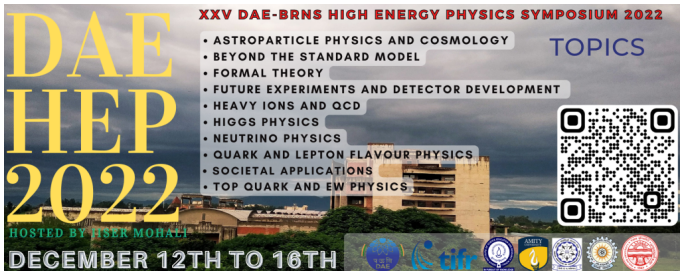

Contribution ID: **471** Type: **Poster**

Poster: Exploring millicharged dark matter components from the shadows

Tuesday 13 December 2022 14:00 (1 hour)

Recent image of the M87* and Sgr A* black hole by EHT collaboration has opened a new portal to unlock various mysteries of the universe. Due to extreme gravity around a black hole, there will be an enhanced distribution of dark matter, which will have a significant effect on the image of the black hole. One certain feature of a black hole image is the black hole shadow, which can be used to extract information about this dark matter environment. There have been various models of dark matter, which propose an effective (but very weak) interaction of dark matter with light, which leads them to have a fractional charge and is thus called millicharged dark matter. I will present to you the effect of this millicharged dark matter environment on the shadow of a black hole. I will also show the proposed bound on millicharged dark matter parameter space, based on more precise future observation of the black hole shadow.

Ref.: Exploring millicharged dark matter components from the shadows
Lalit S. Bhandari(IISER, Pune), Arun M. Thalapillil(IISER, Pune)
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