Contribution ID : **19** Type : **not specified**

Dark matter distribution and annihilation at the Galactic center

Friday, 9 October 2015 15:00 (15)

We describe a promising method for measuring the total dark matter mass near a supermassive black hole at the Galactic center based on observations of nonrelativistic precession of the orbits of fast S0 stars. An analytical expression for the precession angle has been obtained under the assumption of a power-law profile of the dark matter density. The awaited weighing of the dark matter at the Galactic center provides the strong constraints on the annihilation signal from the neuralino dark matter particle candidate. The mass of the dark matter necessary for the explanation of the observed excess of gamma-radiation owing to the annihilation of the dark matter particles has been calculated with allowance for the Sommerfeld effect.

Presentation type

Section talk (10+5 min)

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Session Classification : Nuclear physics and particle physics - parallel XII

Track Classification : Nuclear physics and particle physics