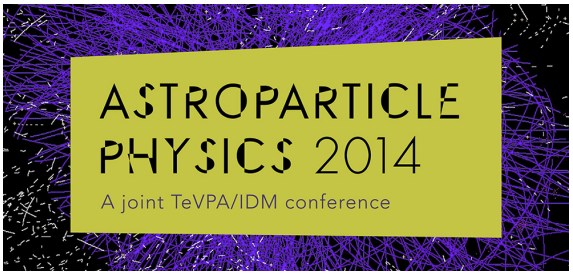

Contribution ID: **281** Type: **Presentation**

Dark-matter distributions around massive black holes: A general relativistic Analysis

Friday 27 June 2014 17:10 (20 minutes)

The cold dark matter at the center of a galaxy will be redistributed by the presence of a massive black hole. We apply the adiabatic growth framework in a fully relativistic setting to obtain the final dark-matter density for both cored and cusped initial distributions. Besides the implications for indirect detection estimates, we show that the gravitational effects of such a dark-matter spike are smaller than the relativistic effects of the black hole for stars orbiting close to the black hole that might be candidates for testing the black-hole no-hair theorems.

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Session Classification: Dark Matter: Cosmological Aspects

Track Classification: Dark Matter: Cosmological Aspects