Contribution ID: **169** Type: **Parallel Session Talk**

Vanishing Dimensions and Planar Events at the LHC

Saturday, 24 July 2010 14:20 (15 minutes)

We propose that the effective dimensionality of the space we live in depends on the length scale we are probing. As the length scale increases, new dimensions open up. At short scales the space is lower dimensional; at the intermediate scales the space is three-dimensional; and at large scales, the space is effectively higher dimensional. This setup allows for some fundamental problems in cosmology, gravity, and particle physics to be attacked from a new perspective. The proposed framework, among the other things, offers a new approach to the cosmological constant problem and results in striking collider phenomenology.

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Session Classification: 10 - Beyond the Standard Model (theory and experimental searches)

Track Classification: 10 - Beyond the Standard Model (theory and experimental searches)