UNIVERSITÄT BONN

Bethe Colloquium

Georgi Dvali

LMU-MPI, Munich

Saturons and their role in particle physics and cosmology

"Saturons" are macroscopic objects that exhibit maximal microstate degeneracy within the validity of a given quantum field theoretic description. Due to this feature, saturons and black holes belong to the same universality class with common key properties. However, as opposed to black holes, saturons can emerge in renormalizable gauge theories, in the form of solitions, baryons and other bound states. After reviewing the general properties of saturons, we discuss their potential implications for particle physics and cosmology. In particular, saturons are interesting candidates for dark matter. Due to the maximal microstate entropy, the saturon dark matter can form as a result of a direct quantum transition from the radiation thermal bath. Correspondingly, it can provide a superheavy dark matter formed at very low temperatures.

BCTP, Room W 2.019 - Wegelerstr. 10 - 53115 Bonn

Wednesday, July 5, 2023, at 2 p.m.

PLEASE NOTE UNUSUAL TIME!

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