

On axions and ALPs

Tuesday 28 May 2019 11:30 (25 minutes)

New recent developments on axions and axion-like particles (ALPs) will be presented. On the theoretical side, novel heavy axions constructions that solve the Standard Model (SM) strong CP problem with axion masses in the GeV-teV range and low scales will be presented. Small size instantons provide an extra source of axion mass. As a result, no very light axions are present in the low-energy spectrum while massless sterile fermions are a trademark. The axion scale may be not far from the TeV region which translates in observable signals at colliders. This type of models naturally enlarges the parameter space for axions which solve the strong CP problem, well beyond that of invisible axion models. On the phenomenological consequences, new signals at colliders associated to heavy axions and also to generic ALPs will be discussed.

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