

# Top of the ALPs

*Friday, 3 November 2023 11:45 (20 minutes)*

Axion-like particles (ALPs) are pseudo Goldstone bosons that emerge in the low-energy limit of various extensions of the Standard Model. Concrete ALP models include the axion proposed to solve the strong CP problem and can provide a portal to dark matter. In this talk, we focus on searches for ALPs using top quark measurements at the LHC. Since the ALP couples more strongly to heavier fermions, ALPs can leave significant virtual effects in the top kinematic distributions in  $t\bar{t}$  production. We show how to constrain the ALP properties from precision measurements of top quark observables. We present a comprehensive calculation that goes beyond the widely used leading-log approximation, and we assess the reliability of this approximation.

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