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On the coupling of axion-like particles to the top quark

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I will discuss an Effective Field Theory which extends the SM by an Axion-Like Particle (ALP) and particularly focus on the coupling of a light ALP to top quarks.

We use high-energy LHC probes, and examine both the direct probe to this coupling in associated production of a top-pair with an ALP, and the indirect probe through loop-induced gluon fusion to an ALP leading to top pairs. Using the latest LHC Run II data, we provide the best limit on this coupling and furthermore compare these limits with those

obtained from loop-induced couplings in diboson final states.

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