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## One-loop corrections to ALPs effective couplings

*Thursday 3 June 2021 15:30 (6 minutes)*

I present the one-loop contributions to ALP-SM couplings stemming from effective ALP operators, including all finite corrections. The complete leading-order (dimension five) effective linear Lagrangian is considered. These corrections can become a useful tool to test ALP-SM interactions which are hard to measure via their loop impact on other observables that are more experimentally constrained. As an example, ALP-WW interaction is hardly observed at tree level, but competitive constraints are obtained via its contribution to ALP- $\gamma\gamma$  interaction at one-loop order. These results are of particular impact on non-resonant LHC and accelerator searches of ALP coupling to  $\gamma\gamma$ ,  $ZZ$ ,  $Z\gamma$ ,  $WW$  and fermions.

### **arXiv number (if applicable)**

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