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# Higher-order contributions to direct CP violation in $K \rightarrow \pi\pi$ decays

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## Summary

The direct CP violation parameter  $\varepsilon'$ , measured to about 15% accuracy and highly sensitive to BSM effects, is on track to become a new precision observable as progress in lattice QCD is starting to provide the necessary non-perturbative operator matrix elements from first principles, and with increasing accuracy.

This in turn implies a need for controlling so far subleading uncertainties, including from higher perturbative orders in the calculation of the short-distance ingredients. I report on the first NNLO calculation of  $\varepsilon'$  and some associated theoretical issues.

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**Session Classification:** Flavor