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# The QCD Sphaleron Rate: A First-Principles Determination from Inverse-Problem Techniques

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The sphaleron rate is a key phenomenological quantity, relevant both for axion thermal production in the early Universe and for transport phenomena such as the Chiral Magnetic Effect.

I will begin by outlining the numerical strategy used to extract the sphaleron rate from lattice correlators, employing a regularized Backus–Gilbert reconstruction.

Then, I will present early results for the sphaleron rate at non-zero spatial momentum in pure-gauge theory, obtained from correlators double-extrapolated to the continuum and to zero smoothing radius.

## Special requests

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