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## Monte Carlo calculations using the holomorphic gradient flow

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Questions about quantum field theories at non-zero chemical potential and/or real-time correlators are often impossible to investigate numerically due to the notorious sign problem. A possible solution to this problem is to deform the integration domain for the path integral in the complex plane. We describe a family of such deformations, built using the holomorphic gradient flow, that interpolate between the original integration domain (where the sign problem is severe) and the union of relevant thimbles (where the sign problem is mild but a multimodal probability distribution complicates the Monte Carlo sampling). We show how this works in a fermionic model and for computing real time correlators for a simple thermal quantum field theory.

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