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Gauge-equivariant multigrid neural networks

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In the interesting physical limits, the numerical solution of the Dirac equation in an $SU(3)$ gauge field suffers from critical slowing down, which can be overcome by state-of-the-art multigrid methods. We introduce gauge-equivariant neural networks that can learn the general paradigms of multigrid. These networks can perform as well as standard multigrid but are more general and therefore have the potential to address a larger range of research questions.

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