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Glueball dark matter in SU(N) lattice gauge theory

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The glueballs in the SU(N) Yang-Mills theory are theoretically the most natural among composite dark matter scenarios. In this work, we evaluate the interglueball potential in SU(N) lattice gauge theories using the HALQCD method and derive the glueball dark matter scattering cross section, and then constrain the scale parameter of the gauge theory from the observational data.

Summary

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