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Stress-tensor distribution around flux tube in SU(3) Yang-Mills theory

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We study the spatial distribution of the stress tensor around the quark-anti-quark system in SU(3) lattice gauge theory. The formation of the flux tube and its detailed structure after the continuum limit is revealed in terms of the stress tensor. The Yang-Mills gradient flow plays a crucial role to realize the analysis of the stress tensor on the lattice.

We also perform an analysis of the stress-tensor distribution in a dual-superconductor model. From the comparison with this model, we argue that the numerical results on the lattice suggest that the vacuum of SU(3) Yang-Mills theory is like a type-I superconductor.

Reference:

R. Yanagihara, et al., arXiv:1803.05656

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