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Chern-Simons term in the geometric theory of defects

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Abstract

© 2017 American Physical Society. The Chern-Simons term is used in the geometric theory of defects. The equilibrium equations with δ-function source are explicitly solved with respect to the SO(3) connection. This solution describes one straight linear disclination and corresponds to the singularity in the connection but not the metric which is the flat Euclidean metric. This is the first example of a disclination described within the geometric theory of defects. The corresponding angular rotation field is computed.

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