

Topology-preserving diffusions in Hydrodynamics

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Abstract

We first discuss the general concept of topology-preserving diffusion process for closed differential forms and currents. Then, more concretely, we address the magnetic relaxation equations discussed by Moffatt [5], in connection with topological hydrodynamics [2, 5]. We introduce for them a concept of dissipative solutions under gradient flow evolution, somewhat in the spirit of Lions (for the Euler equations) and Ambrosio-Gigli-Savaré (for the heat equation) [1, 4].

References

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