

# Generalized solutions of the Navier-Stokes equation

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## Talk Abstract

We present a stochastic variational principle for the (deterministic) Navier-Stokes equation. Solutions are understood in the weak sense. The corresponding Lagrangian paths are stochastic and define generalized flows for Navier-Stokes, similar to generalized flows introduced by Y. Brenier for the Euler equation. We discuss both the compressible and the incompressible case. The latter is recent ongoing work while the former corresponds to the paper cited in the bibliography.

**Keywords:** Navier-Stokes equation, Stochastic Lagrangian flows.

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## References

- [1] A.B. Cruzeiro, M. Arnaudon and S. Fang, Generalized stochastic Lagrangian paths for the Navier-Stokes equation, *Ann. Sc. Norm. Super. Pisa, Cl. Sci. (5)* 18, no 3 (2018).