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**Daniel Fusca\*** ([dfusca@math.toronto.edu](mailto:dfusca@math.toronto.edu)), Department of Mathematics, University of Toronto, 40 St. George St., Room 6290, Toronto, Ontario M5S 2E4, Canada. *Lie algebroid and a rigid body in a fluid.*

In the '60s, Arnold framed the motion of an incompressible fluid as the Euler-Poincare equations on the dual of the Lie algebra of divergence-free vector fields. If a free rigid body is present in the fluid, it turns out that the corresponding phase space becomes (the dual of) a certain Lie algebroid, rather than the Lie algebra of vector fields. In this talk we outline how the equations of motion for a rigid body in an incompressible fluid may be derived as Euler-Poincare equations on the dual of a naturally chosen Lie algebroid. (Received March 21, 2017)