1067-35-1362   **Jean-Paul Zolesio*** (`Jean-Paul.Zolesio@inria.fr`), INLN, 1361 routes des Lucioles, Sophia Antipolis, F-06560 Valbonne, France. *Variational Solution to Incompressible Euler Equation.*

Following previous work we adopt the tube variational principle. The set of admissible tubes is not a convex one, but using the transverse vector field technique we are able to built admissible perturbation of any optimal tube. The associated necessary condition leads to the usual Euler equation for incompressible fluids. We generalize this variational formulation for various constraints and discuss stability of solutions. (Received September 20, 2010)