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Free surface shape and flows of an inviscid liquid LAUST TOPHØJ, TOMAS BOHR, Technical University of Denmark, FLUID DTU TEAM — When the Euler equations governing inviscid flow are projected onto a stationary free surface, one can obtain a self-contained set of equations involving only the values of the physical fields on the free surface. These can be solved to yield relations between the shape of the free surface and the surface-tangential flow components at the free surface. Applications of a simplified set for systems with circular symmetry include [Bergmann et. al., JFM 679, pp. 415-431 (2011)]. The talk will focus on the derivation of these surface flow equations, with the free surface treated as a Riemann manifold. Examples of applications will be discussed.

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