ALEXEI F. CHEVIAKOV, University of Saskatchewan
Conservation Laws of Surfactant Transport Equations

We present interfacial convection and convection-diffusion equations which model the transport of surfactants in an incompressible two-phase flow. The model employs the level set formulation of the interface. In both convection and convection-diffusion settings, in three dimensions, we derive infinite families of conservation laws for these equations. Using these conservation laws, surfactant transport equations can be written in a fully conserved form. This is a joint work with C. Kallendorf, M. Oberlack, and Y. Wang (TU Darmstadt).