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Parametric excitation of large-scale Marangoni convection in a liquid layer with insoluble surfactant ALEXANDER MIKISHEV, Sam Houston State University, ALEXANDER NEPOMNYASHCHY, Technion-Israel Institute of Technology — The large-scale Marangoni convection in a liquid layer heated from below in the presence of an insoluble surfactant on its deformable free surface is considered. The layer is subject to vertical vibrations with the frequency 2. Nonlinear amplitude equations governing the evolution of large-scale disturbances of temperature, surfactant concentration and surface deformation are derived in the limit of small Biot number and large capillary number. The system of linearized equations is investigated by means of the Floquet approach. The thresholds of subharmonic, harmonic and quasi-periodic types of instabilities are determined.

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