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On a Bioconvective Generalized Flow

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Abstract

We present a model of bioconvective flow that describes the hydrodynamic of a microorganism culture. The movement of these microorganisms against a given vertical gravitational force produces a convection in the fluid. The model consists of the Navier-Stokes equations for the movement of the fluid and some convection-diffusion equations for the concentration of microorganisms. In the classical model the viscosity of the fluid is constant. We show some results obtained to the generalized case in which the concentration of microorganisms affects the viscosity of the fluid both in the stationary case and in the case of evolution.

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