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Jose Luiz Boldrini* (boldrini@ime.unicamp.br), UNICAMP-IMECC, CP 6065, Campinas, Sao Paulo 13083-859, Brazil, and **Francisco Guillen-Gonzalez**. *Forced Time-Periodic Solutions for a Generalized Boussinesq Model*. Preliminary report.

The aim of this work is to prove existence of regular time-periodic solutions for a generalized Boussinesq model with nonlinear diffusion for the equations of velocity and temperature, forced by a time-periodic external field, in the case of Dirichlet boundary condition for the temperature. This case remained as an open problem in *B. Climent-Ezquerro, F. Guillén-González, M.A. Rojas-Medar, Time-periodic solutions for a generalized Boussinesq model with Neumann boundary conditions for temperature Proc. R. Soc. A, 463, 2153-2164, 2007.*

The main idea is to obtain higher regularity in time for the temperature (up to $L^\infty(0, T; H^2(\Omega))$) than for the velocity (only up to $L^2(0, T; H^2(\Omega))$), differently from the Neumann boundary case, where an easier argument is gives higher regularity in space for the temperature ($L^2(0, T; H^3(\Omega))$). (Received December 29, 2007)