

Global Existence For Multicomponent Reactive Flows

Martine Marion

Ecole Centrale de Lyon, France, Martine.Marion@ec-lyon.fr

Abstract

We consider multicomponent combustion problems in the presence of complex chemistry and nonlinear diffusion laws given by the Stefan Maxwell model of diffusion. The corresponding fully nonlinear reaction-diffusion equations are coupled with the incompressible Navier-Stokes equations. We first investigate the Stefan Maxwell model which involves a singular matrix. Then we establish results of existence of solutions.

This is joint work with Roger Temam.