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Classical Solutions to a Combustion Problem in Porous Media with n Layers

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In this talk, we prove the existence of a global solution for a nonlinear system consisting of n parabolic equations coupled to n ordinary differential equations. Such a system models a combustion process in a porous medium with n layers in which compressibility effects are neglected, but heat transfer between the layers as well as heat conduction are taken into a account. We obtained a classical solution under the assumptions that the initial data is bounded and Lipschitz.

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