

On the Existence of Travelling Waves in a Model of Slow, “Constant density” Combustion

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In this article, the existence of travelling wave solutions in a model for slow, “constant density” combustion will be discussed. The model is considered for a one step chemical reactions as $(R \rightarrow P)$. The existence of travelling waves are proved by the existence of specific heteroclinic orbits of a system of ordinary differential equations connecting the unburned state points to a burned state point. In order to do this, we apply some general topological arguments in Ordinary Differential Equations.