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Anna Ghazaryan* (ghazarar@miamioh.edu), Department of Mathematics, Miami University, Oxford, OH 45056, and **Stephane Lafortune** and **Peter McLarnan**. *Stability analysis for combustion fronts traveling in hydraulically resistant porous media.*

We study front solutions of a system that models combustion in highly hydraulically resistant porous media. The spectral stability of the fronts is tackled by a combination of energy estimates and numerical Evans function computations. Our results suggest that there is a parameter regime for which there are no unstable eigenvalues. We use recent works about partially parabolic systems to prove that in the absence of unstable eigenvalues the fronts are convectively unstable. (Received January 06, 2015)