## Flame propagation in periodic media: Homogenization of a free boundary problem.

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We investigate the effects of homogenization on a parabolic free boundary problem describing the combustion of premixed gas. We study the asymptotic properties of Pulsating Waves, which are Travelling Wave-like solutions, describing front propagation in periodic media. We shall see that the homogenization does not lead to an averaging of the properties of the medium. In particular, we show that the effective speed of propagation is given by the smallest slope of planelike solutions of an elliptic free boundary problem (and thus depends on the smallest value of the coefficients).