

# Variational characterization of the speed of propagation of fronts for the nonlinear diffusion equation

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## Abstract

We give an integral variational characterization for the speed of fronts of the nonlinear diffusion equation  $u_t = u_{xx} + f(u)$  with  $f(0)=f(1)=0$ , and  $f>0$  in  $(0,1)$ , which permits, in principle, the calculation of the exact speed for arbitrary  $f$ .