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The method of approximate fundamental solutions for non-linear thermal explosions.

The minimal solution of a steady-state blow-up problem is found using a numerical method that is based on the approximate particular solutions and approximate fundamental solutions. The numerical method is highly accurate and efficient. It needs neither domain discretization nor boundary discretization. Critical values of the Frank-Kamenetskii parameter are computed for two-dimensional problems with different geometrical boundaries. (Received January 25, 2017)