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Reduced Model for Detonation Wave JEAN-BERNARD MAILLET, LAURENT SOULARD, CEA, GABRIEL STOLTZ, CERMICS — We present a mesoscopic model for reactive waves which extends the model proposed by G. Stoltz (G. Stoltz, Europhys. Lett. **76** (2006) 849). A complex molecule (or a group of molecules) is replaced by a single mesoparticle, evolving according to some Dissipative Particle Dynamics. Chemical reactions can be handled in a mean way by considering an additional variable per particle describing a rate of reaction. The evolution of this rate is governed by the kinetics of a reversible exothermic reaction. Numerical results show that the reactive wave behaves like a detonation wave.

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