

Abstract Submitted
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Premixed Combustion Model for Boron Clouds MENGZE WANG,
WANG HAN, ZHENG CHEN, Peking University — Boron particle is an ideal additive in solid propellants and fuels due to its very high volumetric heat release. In this study, a premixed combustion model for boron clouds is developed based on a previous combustion model for single boron particle. The flame structure is assumed to be composed of three zones: the preheat zone, the ignition zone, and the reaction zone, and analytical solutions are derived from the governing equations. Consequently the influence of the boron clouds' physical properties on the flame propagation process is investigated.

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