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REVIEW OF MODELLING OF PLUME RADIATION FROM SOLID ROCKET MOTOR

S. R. Shine[*,§], Ullekh Pandey[**] and M. J. Chacko[**]
*Indian Institute of Space Science and Technology, Thiruvananthapuram, India, 695547
[**]VSSC, Indian Space Research Organisation, Thiruvananthapuram, India, 695022
[§]Correspondence author. Fax: +91 471 2568405 Email: shine@iist.ac.in

ABSTRACT

The present paper aims to bring all research carried out in the field of modeling of plume radiation from solid rocket motors. The analytical and numerical procedures followed, and major inferences drawn are reviewed in detail, and compared where ever possible. Review has been made through a discussion of the analysis methodologies and the factors that influence plume radiation from solid rocket motors (SRM). Historical perspective of prediction methodology of SRM plume radiation is brought out. Efforts are made to bring out the research carried out in combustion modeling of SRM propellant, Al_2O_3 particle size and thermo-optical property estimation, methods of solutions for gas and particle radiation modeling. Critical gaps and recent progress made are highlighted for setting up the future direction of research.