A Study on the Prediction of the Aerodynamic Characteristics of the Orbital Block using SMILE code

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KSLV-I should fly through continuum regime to rarefied regime. However, it is not easy to calculate the aerodynamic characteristics of KSLV-I in rarefied regimes. To compute it in this regime, DSMC method is widely accepted and SMILE code is one of the codes which were developed to compute the rarefied regimes flows with DSMC method. In this study, the aerodynamic characteristics of orbital block(2nd stage of launch vehicle + satellite) were predicted using SMILE code, according to the different altitudes and aerodynamic conditions.