

attempt has been made to analyze reentry vehicle aerodynamics under hypersonic rarefied condition by use of DSMC code, which has been validated by comparing Apollo capsule aerodynamics with other's results. The purpose of this study is to investigate the effects of real gas model on hypersonic rarefied aerodynamics. The results show that rarefied gas effect influences hypersonic rarefied aerodynamics much more than real gas effect. Real gas effect influences friction a little with increasing rarefaction, and the friction drag predicted by the real gas model tends to be lower than those predicted by the perfect gas model. At 105km altitude, drag coefficient is little affected by angle of attack.

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返回器高空稀薄气动特性的真实气体效应研究

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Real Gas Effects of Reentry Vehicle Aerodynamics under Hypersonic

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