

A New Method for Estimating the Mass Recession Rate for Ablator Systems

Authors : Bianca A. Szasz, Keiichi Okuyama

Abstract : As the human race will continue to explore the space by creating new space transportation means and sending them to other planets, the enhance of atmospheric reentry study is crucial. In this context, an analysis of mass recession rate of ablative materials for thermal shields of reentry spacecrafts is important to be carried out. The paper describes a new estimation method for calculating the mass recession of an ablator system, this method combining an old method with a new one, which was recently elaborated by Okuyama et al. The space mission of USERS spacecraft is taken as a case study and the possibility of implementing lighter ablative materials in future space missions is taking into consideration.

Keywords : ablator system, mass recession, reentry spacecraft, ablative materials

Conference Title : ICTHT 2014 : International Conference on Thermophysics and Heat Transfer

Conference Location : London, United Kingdom

Conference Dates : November 28-29, 2014