

Basic Approaches in Assessing Combustion Stability to Pressure High-frequency Oscillations in Liquid Rocket Engines

V.P. Pikalov

NIICHIMMASH, Sergiev Posad, Moscow Region, Russia

(E-mail : mail@niichimmach.ru)

The paper presents main principles of the procedure for assessing combustion stability to high-frequency (acoustic) pressure oscillations in liquid propellant and gas generators. Stability margin assessment is based on experimentally determined stability characteristics and their comparison with maximum allowable small-amplitude decrement determined by natural acoustic noise of a combustion process as well as relaxation time of combustion response to artificial pressure disturbances are used as the stability characteristics.