Effects of Initial Perturbations on Rayleigh-Taylor Instability Growth at Gas-Liquid Interface

HUANG Wen-Bin, ZOU Li-Yong, LIU Jin-Hong, TAN Duo-Wang, ZHANG Guang-Sheng

（National Key Laboratory of Shock Wave and Detonation Physics,

Institute of Fluid Physics, CAEP，Mianyang 621900，China）

Abstract: Effects of wavelength and amplitude of periodical 2D cosinusoidal perturbations on Rayleigh-Taylor(RT) instability growth at the gas-liquid interface was investigated. A layer of low-strength, dissolved-in-water-gelatin was employed for modeling the liquid driven with gas explosive mixture products. It was shown that wavelength was a main influence factor on RT instability growth, and short-wavelength perturbations grew more rapidly in the linear stage, but long-wavelength perturbations grew more rapidly in the nonlinear stage.

Email：huangwenbin@caep.ac.cn

Tel: +86-0816-2490590

Fax:+86-0816-2485139