A Study of High-resolution Godunov method for compressible flow on fuel cell

김기만, 이성철[*]

한양대학교 화학공학과

(scyi@hanyang.ac.kr[*])

This paper considers the Riemann problem and an associaed Godunov method for a model of time-dependent, compressible euler equations. Gonunov method is extended to second-order accuracy using a method of slope limiting. A third-order TVD Runge-Kutta method is used to advance the solution in time. Second-order Godunov method is extended to the case of two or three spatial dimensions in a straightforward manner. Performance of these methods when applied to fuel cell are numerically tested. These reconstruction and upwind steps result in schemes that are uniformly second-order accurate and economical at smooth regions, and yield high resolution at discontinuities.