

## 可調式算則在空蝕現象的模擬應用

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The purpose is to develop an unsteady compressible multiphase flow cavitation numerical model. As we know, capturing different fluid interface and simulating phase change process are still a great challenge in the calculation analysis of multiphase flow. This paper use mixing conservation equations of multiphase compressible Navier-Stokes as governing equations. we adopt preconditioned method to simulate phase change process. Numerical methods are taken Precondition method by Weiss and smith et al developed. And we adopt Roe's flux splitting method to deal with flux discretization in space. A dual-time implicit formulation with 4-order Runge-Kutta method is employed to accommodate the inherently unsteady physics. The program will enable the numerical stability and computation time obtained a better balance. In this thesis, examples of verifications are 1-d nozzle of the flow path and 2-d blunt body cavitation analysis and the results compared with the experimental data can obtain satisfactory for verification.

Keywords : Two-phase flow, Cavitation, Preconditioning