Abstract Submitted
for the DFD11 Meeting of
The American Physical Society

The analysis of three dimensional flow around a low-aspect-ratio control fin with end plate CHULMIN JUNG, KURNCHUL LEE, CHANKI KIM, Agency for Defense Development — Flow around the tip of control fin is fully three dimensional, and the prediction of lift on the control fin is essential in maneuvering a vehicle in an appropriate manner. Three dimensional flow effect on a low- aspect-ratio control fin is more obvious than on a moderate or high-aspect-ratio control fin. The three dimensional flow effect can be reduced by applying end plate. Through numerical simulations, we examine the flow field around a low-aspect-ratio control fin with and without end plate for different flap angles. The pressure, vorticity, lift and torque on the control fin are analyzed and compared to experiments.

Chulmin Jung
Agency for Defense Development

Date submitted: 03 Aug 2011 Electronic form version 1.4