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INVESTIGATE OF RUDDER DEFLECTED MULTI-BODY SEPARATION

**Abstract**

To involve the complex configurations and various multi-bodies separating, the 3D unstructured body-fitted Cartesian grid and corresponding adaptive technique are used. The body-fitted Cartesian grid is an effective grid system for engineering applications. The N-S equations, coupled the 6 DOFs trajectory equation, are solved to simulate the releasing process. Based on the former method, the platform for store separation with rudder deflecting simulating is founded. The weapon releasing from the cavity would be great disturbed by the flow round the carrier-aircraft and in the cavity. In current paper, several store separation cases are modeled, and compared with the experimental result, and the rudder deflecting during releasing process are also considered. All the result agree well to the experimental data. The simulation shows that the complex flow in the cavity would affect the releasing track, and proper initial conditions are helpful to separate safely.