

An aerodynamic investigation of rocket static stability

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Abstract. The paper presents the outcomes of an investigation into the possibilities for improving a rocket's static stability margin as a function of its shape. The aerodynamic investigation includes several variants of the external design, such as different body lengths and various configurations of the control surfaces. The research was conducted over a wide range of Mach numbers. Based on the CFD analyses, trends in the Center-of-Pressure location were identified and quantitatively described.