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RESEARCH OF APPLICATION OF MBSE THROUGHOUT THE WHOLE LIFECYCLE OF
CUBESAT SYSTEM

Abstract

Model-Based Systems Engineering(MBSE) has been a research hotspot in recent years. Comparing with traditional document-centered systems engineering, it improves work efficiencies, ensures design information intuitive and consistent, and avoids design errors caused by ambiguity of natural languages, thus is an effective means of solving complicated problems of space systems engineering. This paper presents how MBSE is applied to CubeSat throughout its whole lifecycle. Firstly, it briefly introduces the connotative meaning of MBSE, then it provides a MBSE methodology adapted to the CubeSat system. Finally, this paper elaborates how MBSE is used throughout CubeSat's whole lifecycle, including steps such as mission analysis, preliminary design, detailed design, VV, and so on. These will lay the foundation of the research of model-based CubeSat systems engineering.