Comparative Study of Reusable Rocket Engines A Literature Review

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Abstract

Currently, humans rely on technology that uses information from space such as GPS (Global Position System), meteorology predictions, satellite communications and Earth observation. The development of launch vehicles for these satellites was led by country governments but now it is also led by private entities. With several companies betting more and more on the reuse of launch vehicles, it is of utmost importance to do a study about the reusable rocket engines that have been developed, or are in the process of development, in the last 25 years, to identify the common points, differences, and correlate the performance and costs of this type of reusable engines. This paper addresses this subject, providing useful information to the market stakeholders, such as to understand which entities have the most advanced and appealing reusable rocket engines. In addition, a comparison on the parameters of the launchers/rocket engines is made, allowing to identify the main future developments, or, in other words, identifying the most promising and the most unlikely reusable engines to be used. At the end of this paper, comparative tables and graphs on reusable rocket engines are presented, which may serve as a reference for companies wishing to design reusable launch vehicles.

Keywords: Reusable rockets engines, Spacecraft, Space industry, Database review

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