

Variation of Stagnation Properties at Various Altitudes of an Klimov RD-33 Engine

Authors : Upamanyu Majumder, Angshuman Das

Abstract : The Klimov RD-33 is a turbofan jet engine for a lightweight fighter jet that is the primary engine for the Mikoyan MiG-29. Its production started in 1981. The RD-33 was the first afterburning turbofan engine produced by the Klimov Company of Russia in the 8,000 to 9,000 kilograms-force (78,000 to 88,000 N; 18,000 to 20,000 lbf) thrust class. It features a modular twin-shaft design with individual parts that can be replaced separately and has a good tolerance to the environment. The RD-33 is simple to maintain and retains good performance in challenging environments. In this paper the stagnation properties (pressure and temperature) at the intake diffuser, compressor and turbine sections of the RD-33 engine are calculated using the standard atmosphere conditions at different altitudes (take-off, 5000m, 10000m, 15000m, 20000m and 22500m). The results are plotted against altitude values using MS-Excel.

Keywords : Klimov RD-33 engine, stagnation properties, various altitudes, ms-excel

Conference Title : ICAME 2015 : International Conference on Aeronautical and Mechanical Engineering

Conference Location : Bangkok, Thailand

Conference Dates : December 17-18, 2015