ABSTRACT

FIVE-DIMENSIONAL FLOW IN SOLID FUEL ROCKET ENGINES – FUN WITH LaTeX

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Solid fuel rocket engines are one of the most reliable and efficient propulsion systems used to lift payloads into orbit, in terms of $\lambda = (\Box + \Diamond)\psi$. Used throughout the astrodynamics community, the theory of the flow within the motor chamber is in fact a black art which defies all attempts at analysis.

The present work (no exception to the statement above) contains a theoretical and numerical approach to the flow of the gases within the motor chamber. The shape of the chamber and original fuel configuration, and the patterns of combustion and flow/expulsion of gases, are modelled by a system of thirty fourth-degree differential equations.

$$f_i^{(34)}(x, y, z, t) = \sum_{j=0}^{33} a_{ij} f_i^{(\mathrm{j})}(x, y, z, t)$$

Acceptable numerical solutions would require one thousand pentium processors working day and night for $10^{11.2}$ years.

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Here's where you acknowledge folks who helped. Here's where you acknowledge folks who helped. Here's where you acknowledge folks who helped.

DEDICATION

To all of the fluffy kitties. To all of the fluffy kitties. To all of the fluffy kitties. To all of the fluffy kitties.

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