# GUIDELINES FOR CREATING MANUSCRIPTS FOR CONFERENCE PROCEEDINGS

M. Jones, German Society for Aeronautics and Astronautics e.V., Bonn, Germany

#### **Abstract**

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UPGRADING OF ANALYTICAL EQUATIONS FOR ADIABATIC SUPERSONIC FLOWS

F. Steinmetz University of Stuttgart
Stuttgart, 7-70599
Germany

OVERVIEW

At the institute of Aerospace Thermodynamics at the University of Stuttgart the supersonic combustion is under investigation. In order to cross-check the measurements done in the test facilities, analytical and numerical investigations were undertaken. This paper in dealing with the analysis of the fluid flow without combustion.

The easiest way of describing the flow of a fluid through a naces is once by doing a single but serious simplification: neglecting the convective heat transfer in the naces. By doing so the problem remains solvable with analytical formulas. This paper will call with the way how included variable physical properties and the losses of total temperature and total relations of activation of activation of activation in the properties it the heat capacity will be presented for several temperatures. Canalizations will be drawn for the temperature and pressure ranges, where the influence of variable physical properties is negligible.

The next step for enhancing the analytical quotions is to include the flower influence of variable physical properties is the localization will be detained to the flower of variable physical properties and the losses of the total imperature and total pressure. By doing so it is possible to calculate the flow in the nozzle is a non-adiabation flow any of including the variable physical properties and the losses of the total imperature and total pressure. By doing so the complete program that was written for this task will be presented and how the iteration is implemented in it. The usage of the analytical solution as an initialization for a separate numerical calculation will be presented and how the iteration is implemented in it. The usage of the analytical solution as an initialization for a separate numerical calculation will be presented and how the iteration is implemented in it. The usage of the analytical solution as

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When numbering equations, please place the numbers in round brackets before the equation with a left-hand margin of the column.

(1) 
$$F_{crit} = \gamma \frac{2\pi E t^2 \cos^2 \alpha}{\sqrt{3(1-\mu^2)}}$$

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