

CARPATHIAN J. MATH.
24 (2008), No. 1, 122 - 129

Parametric study of a simple tunnel fire model

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ABSTRACT. First part of this paper presents an overview of some low Mach flow approximations to the compressible Navier-Stokes equations. Their derivation is based on rewriting the equation for the static pressure. With these derivations variable-density incompressible Navier-Stokes systems with non-zero divergence field are obtained. One of them is taken in order to simulate fires in tunnels. Using a modified projection method, a numerical parametric study with respect to the intensity of the heat source is presented.

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