

NUMERICAL RESEARCH OF THE THERMALSTRESSED STATE OF PETROLEUM- HEATER OPTIONS AT INFLUENCE OF THE VEHICLE SYSTEMS PARAMETERS

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ABSTRACT

Bearing components of oil-heating installations in the form of stems, and also bearing components of the gas-generator plants, combustion engines, flight-type engines, and hydrogen engines are working in complex thermal and force field. In order to provide reliability of oil-heating installations in the form of stems it is necessary to ensure thermal durability of hardware characteristics, i.e. bearing components of the installations.

The paper presents the results of mathematical and numerical modeling of single-phase fluid flow in porous media with periodic microstructure. Object of study is the area in which the cylinders are arranged in a periodic manner. At the boundaries of the area for the flow parameters is set periodic boundary condition. Also in the paper presents comparison with Darcy's law and the calculation of the permeability coefficient for different values of the radius of the cylinders.

KEYWORDS: The Temperature, The Rod, The Thermal Energy, The Algorithm