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# SIMULATING THE PROCESS OF COOLING THE HIGH TEMPERATURE FLOW IN EXPERIMENTAL GROUND RIGS BY MEANS OF WATER INJECTION

K.V. Polyakov

konstantin.vl.p@mail.ru

Bauman Moscow State Technical University, Moscow, Russian Federation

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## Abstract

*The article considers physical processes in the experimental ground rigs used for aerospace engineering ground testing as well as the process of cooling combustion products by means of water injection into the exhaust system gasdynamic contour. We calculated the parameters of the injected wash jet and numerically simulated the interacting processes of liquid droplets with gas flow (injection, split, evaporation etc.). This work examines the model and verificatory problems, justifying the methods of calculating the real stand systems operating at the inlet gas temperatures varying from 1000 to 3500 K, the pressure of about 1...2 bar and the subsonic velocity of the gas. By means of the software package we accomplished the simulation and defined the basic parameters of the outlet flow. For describing the motion of the droplets in the continuous medium the discrete phase DPM model was used.*

## Keywords

*Split, diffusion, disintegration model, cooling the high temperature flow*

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**Polyakov K.V.** — student, Department of Thermophysics, Bauman Moscow State Technical University, Moscow, Russian Federation.

**Scientific advisor** — Frantsuzov M.S., Assistant Lecturer of Thermophysics Department, Bauman Moscow State Technical University, Moscow, Russian Federation.

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