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Modeling, Simulation and Optimization

NUMERIC SIMULATION OF AIR POLLUTION DUE TO NAVAL ENGINES

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Abstract

This paperwork tried to simulate the combustion inside the naval engines using the newest computer methods and technologies with the result of a diverse and rich palette of solutions, extremely useful for the study and prediction of complex phenomena of the fuel combustion.
The paperwork is contributing to the theoretical systematization of the area of interest bringing into attention a thoroughly inventory of the thermodynamic description of the phenomena which take place in the combustion process into the naval diesel engines; to the in depth multidimensional combustion models description along with the interdisciplinary phenomenology taking place in the combustion models; to the FEA (Finite Elements Method) modelling for the combustion chemistry in the non-premixed mixtures approach considered too; the CFD (Computational Fluid Dynamics) model was issued for the combustion area and a rich palette of results interesting for any researcher of the process.

Key words: combustion, computational fluid dynamics, diesel naval engine, finite element analysis

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