

عنوان مقاله:

Numerical 1-D Simulation of Internal Combustion Engines Considering Entropy Level Changes

محل انتشار:

ششمین همایش موتورهای درونسوز (سال: 1388)

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نویسندگان:

Vahid Esfahanian - *Professor of Mechanical Engineering University of Tehran*

Karim Alizad - *Senior Researcher, VFE Research Institute University of Tehran*

Ali Salavati Zadeh - *PhD candidate, school of Mechanical Engineering University of Tehran*

Mahdi Ramezani - *Senior Researcher, VFE Research Institute University of Tehran*

خلاصه مقاله:

Numerical Simulation of Engine is one of the most important part of researches concerning industry and environment matters. 1-D simulation of engine is so vital for engine research. It can show the gas characteristics in any position in engine and widely used by engine producers in the world. In this research, writing a CFD code, which is numerically simulate all of engine by separating engine into some components, that are connected to each other by pipes, every user defined engine can be solved. These components like plenum, valves, cylinder, or junctions are boundary conditions for pipes. The problem is solved considering entropy level changes. For 1-D solvers, usually assumed that entropy level through boundaries remains constant but in valve boundaries in engine simulation, this assumption causes errors. Non-Homentropic flow simulation solves this problem by calculating entropy level changes through boundaries, which is used in our CFD code. The results explain flow characteristics in some nodes and compare Non-Homentropic results with Homentropic results. They show interesting conclusion about these two kind of modeling

کلمات کلیدی:

Non-Homentropic, Internal Combustion Engine, CFD

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