عنوان مقاله:

Thermodynamic Analysis of a Turbocharged Diesel Engine Operating under Steady State Condition

محل انتشار:

دوماهنامه مکانیک سیالات کاربردی, دوره 9, شماره 2 (سال: 1395)

تعداد صفحات اصل مقاله: 13

نویسندگان:

B. Menacer - *Department of Mechanical Engineering, University of Sciences and the Technology of Oran, BP ۱۵۰۵ El - MNAOUER, USTO ۳۱۰۰۰ ORAN, Algeria*

M. Bouchetara - *Department of Mechanical Engineering, University of Sciences and the Technology of Oran, BP ۱۵۰۵ El -MNAOUER, USTO ۳۱۰۰۰ ORAN, Algeria*

خلاصه مقاله:

The purpose of this work is to provide a flexible thermodynamic model based on the filling and emptying approach for the performance prediction of turbocharged compression ignition engine. To validate the model, comparisons are made between results of a developed a computer program in FORTRAN language and the commercial GT-Power software operating under different conditions. The comparisons show that there is a good concurrence between the developed program and the commercial GT-Power software. The variation of the speed of the diesel engine chosen extends from ۸۰۰ RPM to ۲۱۰۰ RPM. In this work, we studied the influence of several engine parameters on the power and efficiency. Moreover, it puts in evidence the existence of two optimal points in the engine, one relative to maximum power and another to maximum efficiency. It is found that if the injection time is advanced, so the maximum levels of pressure and temperature in the cylinder will be high.

کلمات کلیدی:

Thermodynamic, combustion, GT, Fortran, Power, Performance optimization, Filling and emptying method

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1384862