AN EMPIRICAL COMBUSTION MODEL FOR THE BURNING OF RESIDUAL FUEL IN MEDIUM SPEED DIESEL ENGINES

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Different combustion models used for the prediction of the combustion process in compression ignition engines are discussed. Based on a series of tests performed in a RUSTON 6APC medium speed diesel engine with different grades of residual fuels, an Empirical Combustion Model based on Wiebe Simulation is modified to make it applicable to residual fuel operation of medium speed quiescent chamber diesel engines. The model uses the rate of fuel burning pattern of gas oil at 75% engine load in conjunction with the Calculated Carbon Aromaticity Index of the residual fuel under investigation for the prediction of the maximum cylinder pressure and the mean effective pressure.