ADVANCED ENGINE CONTROL POSSIBILITIES TO REACT ON FUEL FEATURES

MARCEL ŠKAROHLÍD
Josef Božek Research Centre of Engine and Automotive Engineering
Technická 4, Praha 6, Czech Republic, 166 07
tel: +420 224351827
marcel.skarohlid@fs.cvut.cz

ABSTRACT
The main topic of this paper is investigation of the combined effect of natural gas fuel composition fluctuation and engine control intervention with regards to only one parameter at once. Ignition timing, boost pressure adjustment and EGR rate are considered as potential control parameters. They are presented by experimental and simulation methodology used in order to assess fuel impact regarding basic changes in its composition. Used simulation tools have been calibrated using experimental data from tested engines.

KEYWORDS: GASEOUS FUEL COMPOSITION, POWER, EFFICIENCY, ENGINE KNOCK, PRODUCTION OF POLLUTANT, GT-POWER, ITERATIVE REGRESSION METHOD, IGNITION TIMING, BOOST PRESSURE, EXHAUST GAS RECIRCULATION, ENGINE CONTROL