Title (en)

METHOD FOR DETERMINING THE COMPOSITION OF A GAS MIXTURE IN A COMBUSTION CHAMBER OF AN INTERNAL COMBUSTION ENGINE WITH RE-CIRCULATION OF EXHAUST GAS AND A CORRESPONDINGLY EMBODIED CONTROL SYSTEM FOR AN INTERNAL COMBUSTION ENGINE

Title (de)

VERFAHREN ZUR BESTIMMUNG DER ZUSAMMENSETZUNG DES GASGEMISCHES IN EINEM BRENNRAUM EINES VERBRENNUNGSMOTORS MIT ABGASRÜCKFÜHRUNG

Title (fr)

PROCEDE POUR DETERMINER LA COMPOSITION D'UN MELANGE GAZEUX DANS UNE CHAMBRE DE COMBUSTION D'UN MOTEUR A COMBUSTION INTERNE COMPRENANT UNE CONDUITE DE RECYCLAGE DES GAZ D'ECHAPPEMENT ET SYSTEME DE COMMANDE DE MOTEUR A COMBUSTION INTERNE CONCU A CETTE FIN

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Application

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Abstract (en)

[origin: WO03046356A2] The invention relates to an engine management system wherein physically based models (16-21) are used to determine the composition and mass of the fresh air/ exhaust gas mixture suctioned by an internal combustion engine (1). Said models respectively simulate the behavior of the internal combustion engine or corresponding engine system in relation to specific state variables. The individual physically based models (16-21) are closely coupled to each other in a partial manner and are used, for instance, to simulate the filling of the combustion chamber of the internal combustion engine(1) with the suctioned fresh air/waste gas mixture in order to simulate the flow of the mass of re-circulating exhaust gas, in order to simulate the behavior of the exhaust gas manifold of the internal combustion engine (1) upstream and downstream from a turbine (2), in order to simulate the storage behavior of the intake manifold of the internal combustion engine, and to simulate the behavior of the intake pipe or inlet manifold whereby the fresh air/exhaust gas mixture is fed to the combustion engine (1) from a corresponding mixing point (10) where the suctioned fresh air is mixed with the exhaust gas re-circulated via the exhaust gas re-circulation line. As a result, a plurality of additional state variables can be determined without additional sensors.

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Citation (search report)

See references of WO 03046356A2

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