

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

Publication

EP 1507967 A2 20050223 (DE)

Application

EP 02790353 A 20021111

Priority

- DE 10158262 A 20011128
- DE 10158247 A 20011128
- DE 10158261 A 20011128
- DE 10158250 A 20011128
- DE 10158249 A 20011128
- EP 0212580 W 20021111

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.

IPC 1-7

F02D 41/00

IPC 8 full level

F02D 41/00 (2006.01); **F02D 41/18** (2006.01); **G01M 99/00** (2011.01); **F02M 25/07** (2006.01)

CPC (source: EP US)

F02D 41/0007 (2013.01 - EP US); **F02D 41/0072** (2013.01 - EP US); **F02D 41/145** (2013.01 - EP US); **F02D 41/18** (2013.01 - EP US); **F02M 26/46** (2016.02 - EP US); **F02M 26/47** (2016.02 - EP US); **F02D 2041/1433** (2013.01 - EP US); **F02D 2200/0402** (2013.01 - EP US); **F02D 2200/0406** (2013.01 - EP US); **F02D 2200/0408** (2013.01 - EP US); **F02D 2200/703** (2013.01 - EP US); **F02M 26/05** (2016.02 - EP US); **F02M 26/10** (2016.02 - EP US); **Y02T 10/12** (2013.01 - EP US); **Y02T 10/40** (2013.01 - EP US)

Citation (search report)

See references of WO 03046356A2

Citation (examination)

EP 0774574 A1 19970521 - MITSUBISHI MOTORS CORP [JP]

Designated contracting state (EPC)

CZ DE ES FR GB IT

DOCDB simple family (publication)

WO 03046356 A2 20030605; **WO 03046356 A3 20041223**; EP 1507967 A2 20050223; EP 1701022 A2 20060913; EP 1701022 A3 20061018; EP 1701025 A2 20060913; EP 1701025 A3 20061018; EP 1701025 B1 20111019; EP 1715163 A1 20061025; EP 1715163 A8 20061213; US 2007012040 A1 20070118; US 7174713 B2 20070213

DOCDB simple family (application)

EP 0212580 W 20021111; EP 02790353 A 20021111; EP 06013404 A 20021111; EP 06013405 A 20021111; EP 06013406 A 20021111; US 85053104 A 20040520