

Title (en)  
ROAD CURVATURE ESTIMATION SYSTEM

Title (de)  
STRASSENKRÜMMUNGS-SCHÄTZSYSTEM

Title (fr)  
SYSTEME D'ESTIMATION DE COURBURE DE ROUTE

Publication  
**EP 1714108 A4 20100113 (EN)**

Application  
**EP 04815709 A 20041224**

Priority  
• US 2004043695 W 20041224  
• US 53234403 P 20031224

Abstract (en)  
[origin: WO2005062984A2] A processor (26) using a first Kalman filter (52, 52.1) estimates a host vehicle state from speed (U) and yaw rate, the latter of which may be from a yaw rate sensor (16) if speed (U) is greater than a threshold, and, if less, from a steer angle sensor and speed (U). Road curvature parameters (C0, C1) are estimated from a curve fit of a host vehicle trajectory or from a second Kalman filter (54, 54.1) for which a state variable may be responsive to a plurality of host state variables (72, 74). Kalman filters (52, 52.1, 54, 54.1) may incorporate adaptive sliding windows. Curvature of a most likely road type is estimated with an interacting multiple model (IMM) algorithm (2400) using models of different road types. A road curvature fusion subsystem (96) provides for fusing road curvature estimates from a plurality of curvature estimators (42.1, 42.2, 42.N) using either host vehicle state, a map database (88) responsive to vehicle location (86), or measurements of a target vehicle (36) with a radar system (14).

IPC 8 full level  
**G01S 13/58** (2006.01); **G01S 13/72** (2006.01); **G01S 13/93** (2006.01); **G01S 13/931** (2020.01)

CPC (source: EP)  
**G01S 13/58** (2013.01); **G01S 13/723** (2013.01); **G01S 13/931** (2013.01); **G01S 2013/932** (2020.01)

Citation (search report)  
• [A] US 5467283 A 19951114 - BUTSUEN TETSURO [JP], et al  
• [A] US 2003154011 A1 20030814 - RAO MANOHARPRASAD K [US], et al  
• [A] US 6265991 B1 20010724 - NISHIWAKI TAKESHI [JP], et al  
• See references of WO 2005062984A2

Designated contracting state (EPC)  
DE GB

DOCDB simple family (publication)  
**WO 2005062984 A2 20050714**; **WO 2005062984 A3 20070222**; EP 1714108 A2 20061025; EP 1714108 A4 20100113;  
JP 2007516906 A 20070628; JP 2012131495 A 20120712; JP 2012131496 A 20120712; JP 4990629 B2 20120801; JP 5265787 B2 20130814;  
JP 5848137 B2 20160127

DOCDB simple family (application)  
**US 2004043695 W 20041224**; EP 04815709 A 20041224; JP 2006547495 A 20041224; JP 2012004375 A 20120112;  
JP 2012004376 A 20120112