

Title (en)  
METHOD FOR DETERMINING A MAXIMUM COEFFICIENT OF FRICTION

Title (de)  
VERFAHREN ZUM ERMITTELN EINES MAXIMALEN REIBWERTES

Title (fr)  
PROCEDE PERMETTANT DE DETERMINER UN COEFFICIENT DE FROTTEMENT MAXIMAL

Publication  
**EP 1483143 A1 20041208 (DE)**

Application  
**EP 03743341 A 20030226**

Priority  
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Abstract (en)  
[origin: WO03074337A1] Currently available systems for regulating driving dynamics, such as for example ESP or TCS, require in the driving dynamical limit range information about the actual maximum coefficient of friction ( $\mu$ -max) between tires and roadway to function reliably. A proven approach is to use, once the regulation is active, the actual utilization of grip as the maximum coefficient of friction. The invention relates to a method for determining the actual maximum coefficient of friction ( $\mu$ -max) independently from the activation of the regulation. According to the inventive method, values ( $C_x$ ,  $C_y$ ) are permanently determined that represent the utilization of grip in the longitudinal and/or transverse direction, based on measured and/or estimated variables that represent the actual longitudinal forces ( $F_x$ ), lateral forces ( $F_y$ ) and vertical forces ( $F_z$ ) acting upon the individual wheels and tires, while using the measured or calculated actual state variables that represent the slip angle ( $\alpha$ ) and/or the slip angle velocity ( $\dot{\alpha}$ ) and/or the longitudinal slip ( $\gamma$ ) and/or the longitudinal slip velocity ( $\dot{\gamma}$ ). The determined values ( $C_x$ ,  $C_y$ ) are compared with threshold values ( $S_x$ ,  $S_y$ ) and are evaluated to determine the maximum coefficient of friction ( $\mu$ -max) while using additional auxiliary variables if the resulting values of comparison are smaller than the threshold values.

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