($\dot{\psi}$)

$$P1=\frac{\partial\dot{\psi}}{\partial\alpha}$$ ( )

$(\dot{\psi})$

$(\dot{\psi})$

$$P2 = \frac{\partial \psi}{\partial \gamma_{lat}} \quad (\quad)$$

$(\dot{\psi})$

$$P2 = \frac{\partial \psi}{\partial \gamma_{lat}} \quad (\quad)$$

$(\dot{\alpha})$

$(\dot{\psi})$

$(\partial\alpha)$

$(\dot{\psi})$

$\dot{\psi}$

$P1=\frac{\partial \dot{\psi}}{\partial \alpha}$ 。

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$P1=\frac{\partial\dot{\psi}}{\partial\alpha}$ 。

$$\dot{\psi} = \frac{V}{R}$$

$$\alpha_{Ackermann} = \frac{L}{R}$$

$$\alpha_{theoretical} = D \times \alpha_{Ackermann} = D \times \frac{L}{R}$$

$$P1 = \frac{\partial \dot{\psi}}{\partial \alpha} = \frac{\dot{\psi}(t2) - \dot{\psi}(t1)}{\alpha(t2) - \alpha(t1)} \quad ,$$

$\dot{\psi}$

$$\alpha_{theoretical} = \frac{\dot{\psi} \times D \times L}{V}$$

$\dot{\psi}$,

$\dot{\psi}$

$$\frac{\partial \alpha_{theoretical}}{\partial \alpha},$$

$\dot{\psi}$

$$P1 = \frac{\partial \psi}{\partial \alpha} \approx \frac{\partial \alpha_{theoretical}}{\partial \alpha} \quad 。$$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$ 。

$$P1 = \frac{\partial \dot{\psi}}{\partial \alpha} < Threshold\_US$$ 。

$\dot{\psi}$

$$P1 = \frac{\partial \alpha_{theoretical}}{\partial \alpha} < Threshold\_US$$,

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\psi}$

$$P2 = \frac{\partial \dot{\psi}}{\partial \gamma_{lat}} ,$$

$$P1 = \frac{\partial \dot{\psi}}{\partial \alpha} > Threshold\_OS\_2$$

$$P2 = \frac{\partial \dot{\psi}}{\partial \gamma_{lat}} > Threshold\_OS\_3$$

$\dot{\psi}$

$\dot{\psi}$

$$P2 = \frac{\partial \alpha_{theoretical}}{\partial \gamma_{lat}},$$

$\dot{\psi}$

$\dot{\psi}$

$\dot{\alpha}$

$\dot{\psi}$

$\dot{\alpha}$

$\dot{\psi}$

$$P1 = \frac{\partial \dot{\psi}}{\partial \alpha} > Threshold\_OS\_2$$

$$P2 = \frac{\partial \dot{\psi}}{\partial \gamma_{lat}} > Threshold\_OS\_3$$

$sign(\dot{\alpha}) \rightarrow\leftarrow sign(\dot{\psi})$

$(sign(\dot{\alpha}) \rightarrow\leftarrow sign(\dot{\psi}))$

$$\frac{\partial \dot{\psi}}{\partial t} > 0 ,$$

$$\frac{\partial(sliding\_rear\_wheels)}{\partial t} > 0 \quad ,$$

滑动= $\frac{Vvehicle - Vwheel}{Vwheel} = \frac{Vvehicle - Radius\_wheel \cdot \omega\_wheel}{Vvehicle}$

$\partial\alpha$

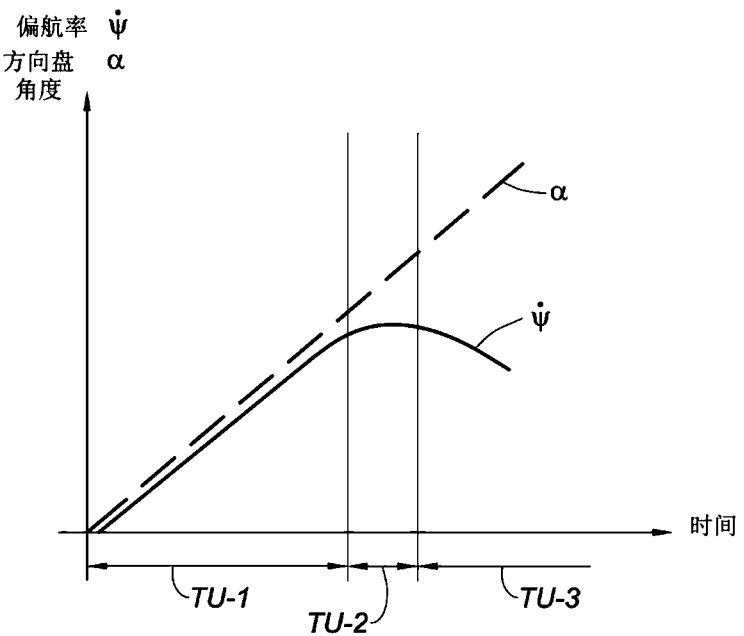
$\partial\alpha \approx 0$

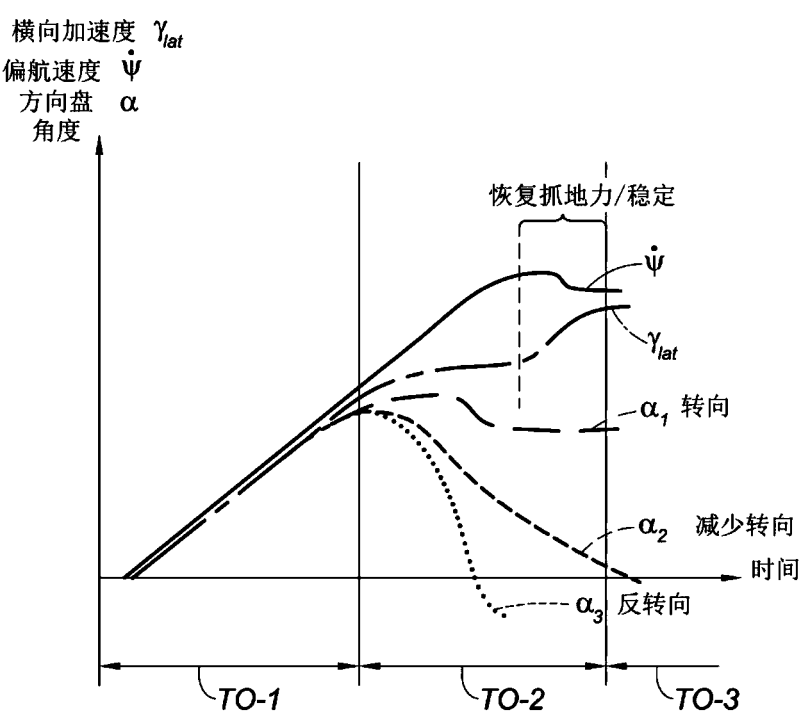
$\partial\alpha$

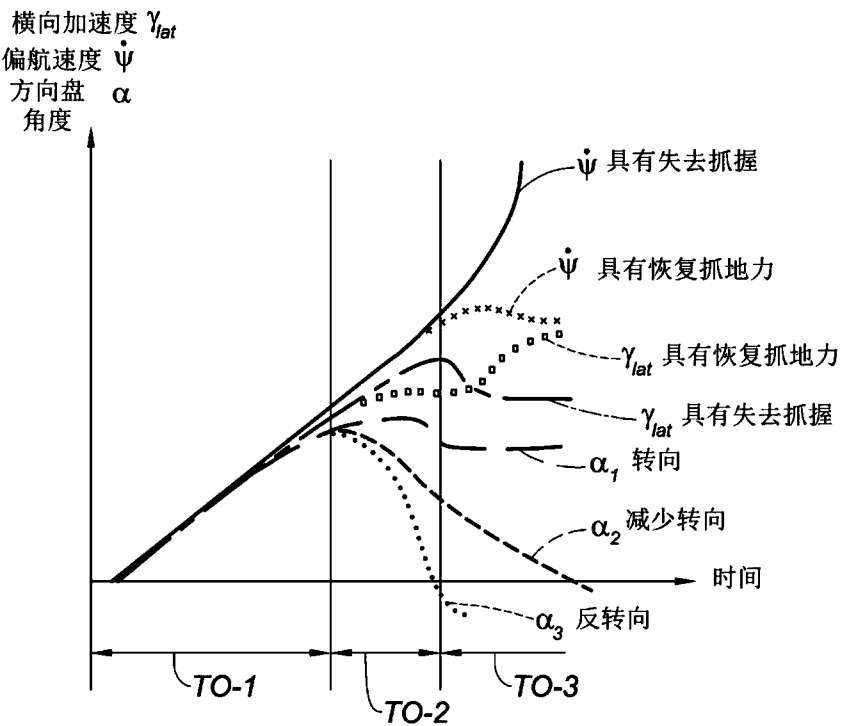
$\dot{\psi}$

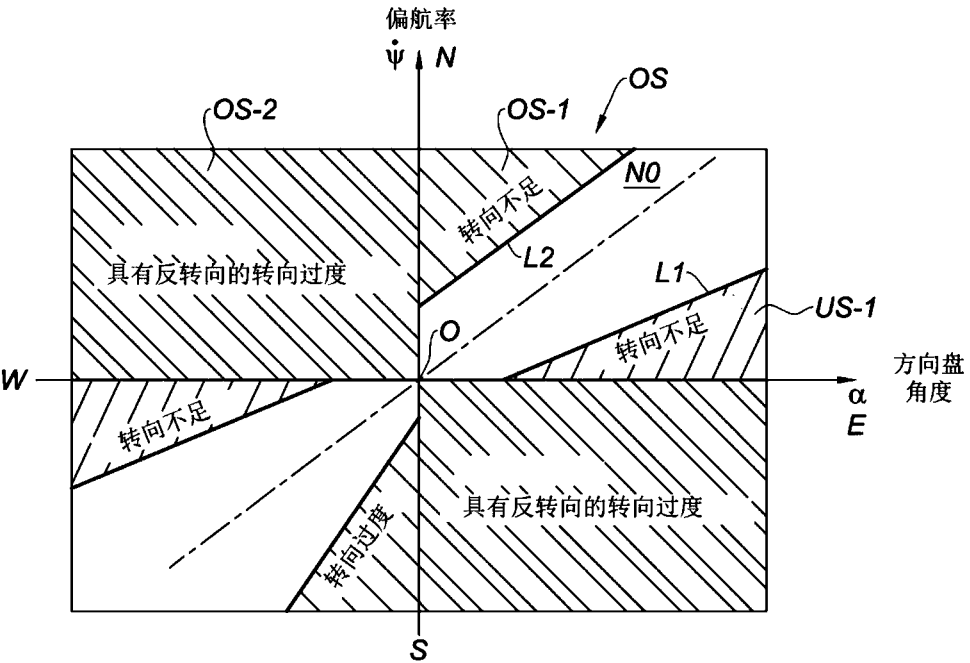
$(\dot{\psi})$

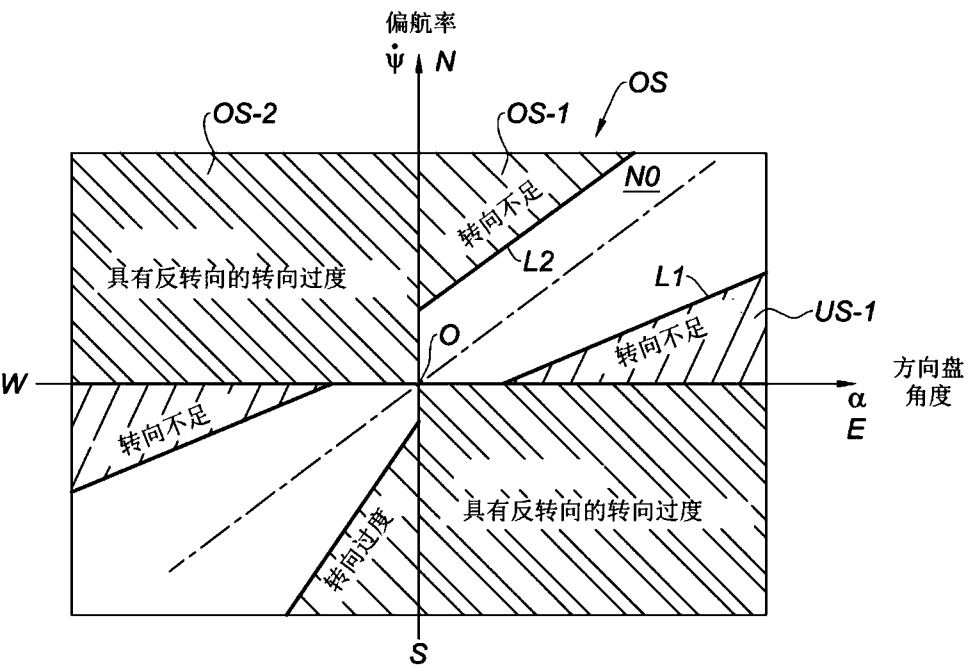
$$P1=\frac{\partial \dot{\psi}}{\partial \alpha} \quad)$$


偏航率 $\dot{\psi}$
方向盘 α
角度
α
$\dot{\psi}$
时间
TU-1
TU-2
TU-3


横向加速度 γ_{lat}
偏航速度 $\dot{\psi}$
方向盘角度 α
恢复抓地力/稳定
$\dot{\psi}$
γ_{lat}
α_1 转向
α_2 减少转向
时间
α_3 反转向
TO-1
TO-2
TO-3


横向加速度 γ_{lat}
偏航速度 $\dot{\psi}$
方向盘 α
角度
$\dot{\psi}$ 具有失去抓握
$\dot{\psi}$ 具有恢复抓地力
γ_{lat} 具有恢复抓地力
γ_{lat} 具有失去抓握
α_1 转向
α_2 减少转向
时间
α_3 反转向
TO-1
TO-2
TO-3


偏航率
$\dot{\psi}$
N
OS
OS-2
OS-1
N0
转向不足
L2
L1
US-1
具有反转向的转向过度
O
转向不足
W
α
方向盘
角度
E
转向不足
具有反转向的转向过度
转向过度
S


偏航率
$\dot{\psi}$
N
OS
OS-2
OS-1
N0
转向不足
L2
L1
US-1
具有反转向的转向过度
O
转向不足
W
α
方向盘
角度
E
转向不足
具有反转向的转向过度
转向过度
S