Emergency Index (EI)

Motion data

V2X

Onboard Sensors

Data format:

θ_A, v_A, A, w_A, l_A, θ_A
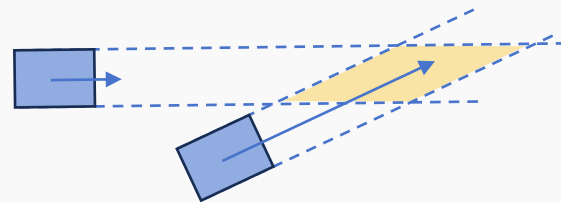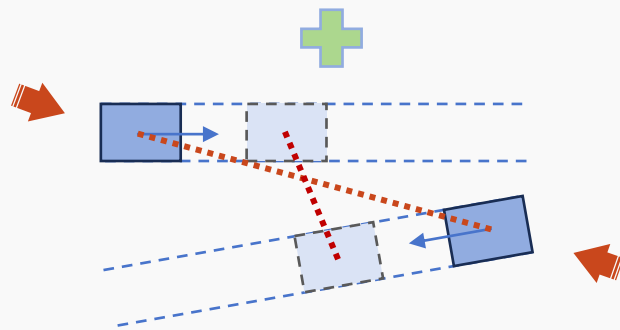
Y, O, X
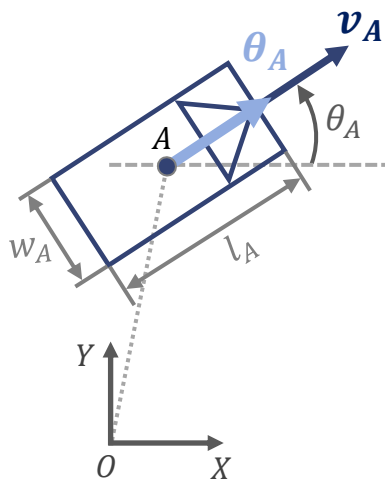
Conflict Detection Model

Spatial Conflict Condition P_1
Check for any vehicle exiting the conflict area

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Spatiotemporal Contraction Condition P_2
Checking for closure

Risk Quantification Model

t_0, $t_0 + TDM$, $Time$

InDepth

v_B, v'_B, v_A

B, A

0, $+0.6$

$$EI = \frac{InDepth}{TDM}$$

$R\, D_{safe}$