

Evasion Assist for Crossing Scenarios

Purpose, Requirements and Challenges

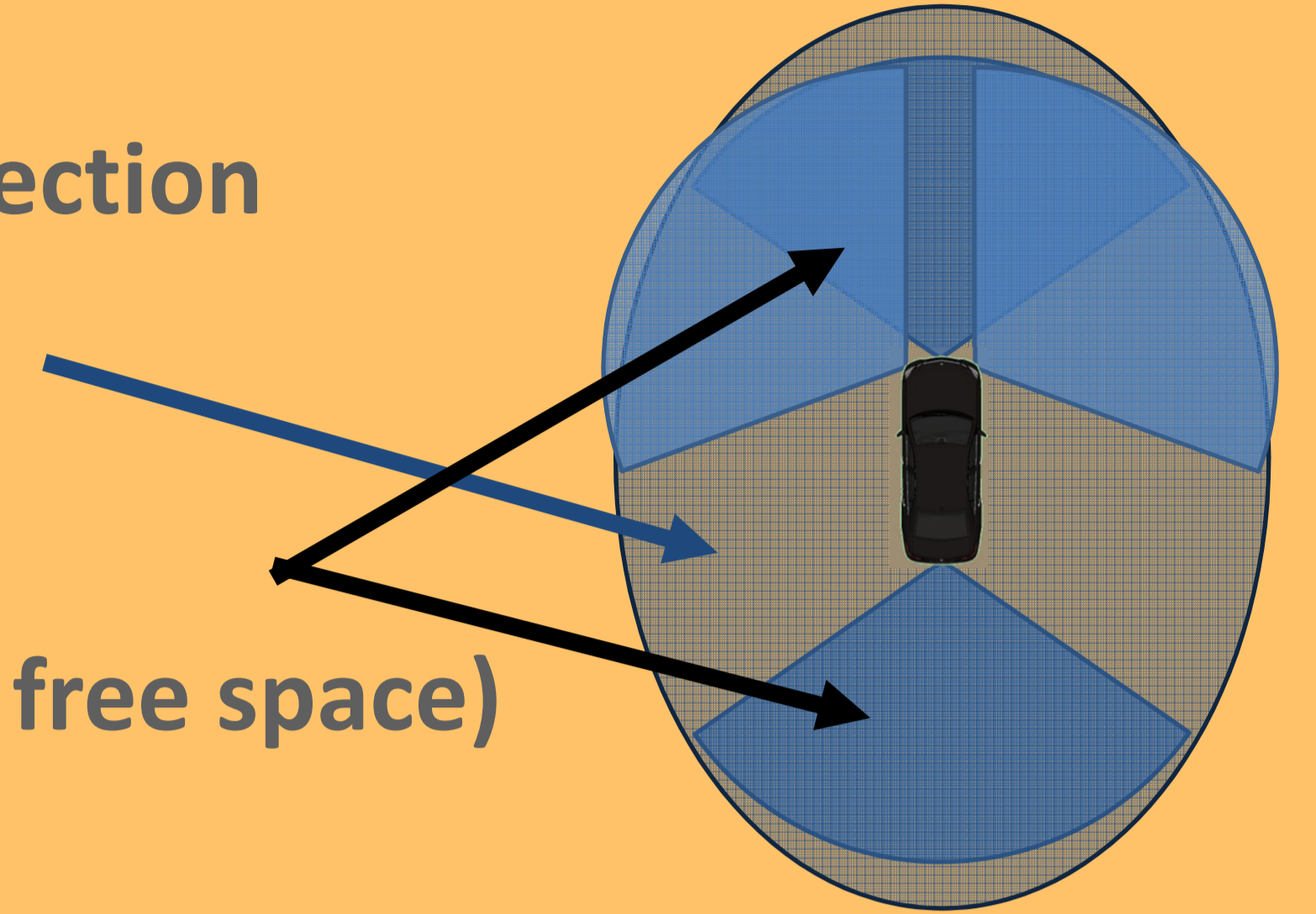
Potential of Evasion Maneuvers in Crossing Scenarios for...

- ... Collision Avoidance
- ... Collision Mitigation - by optimizing the Collision constellation

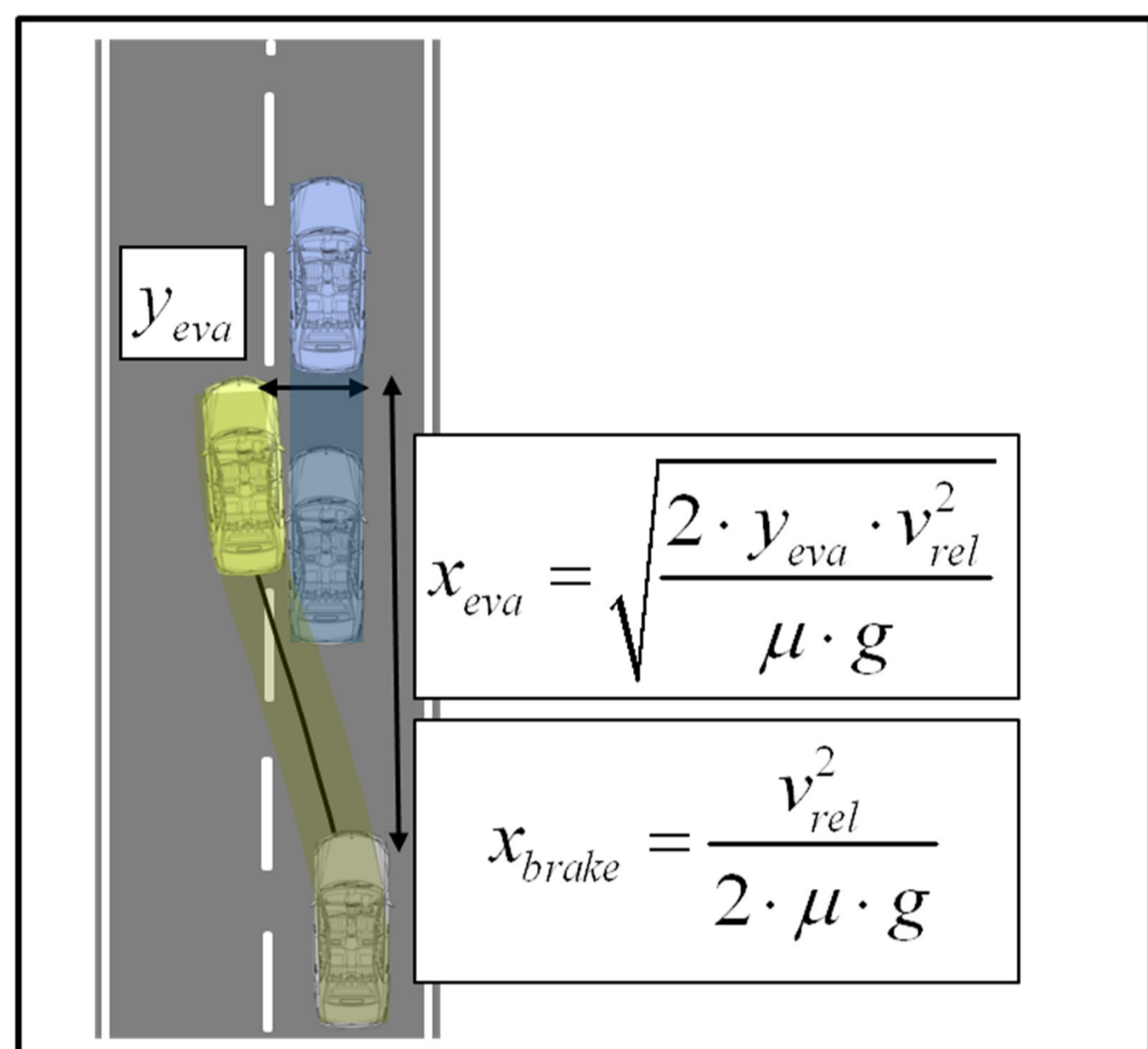


Restrictions:

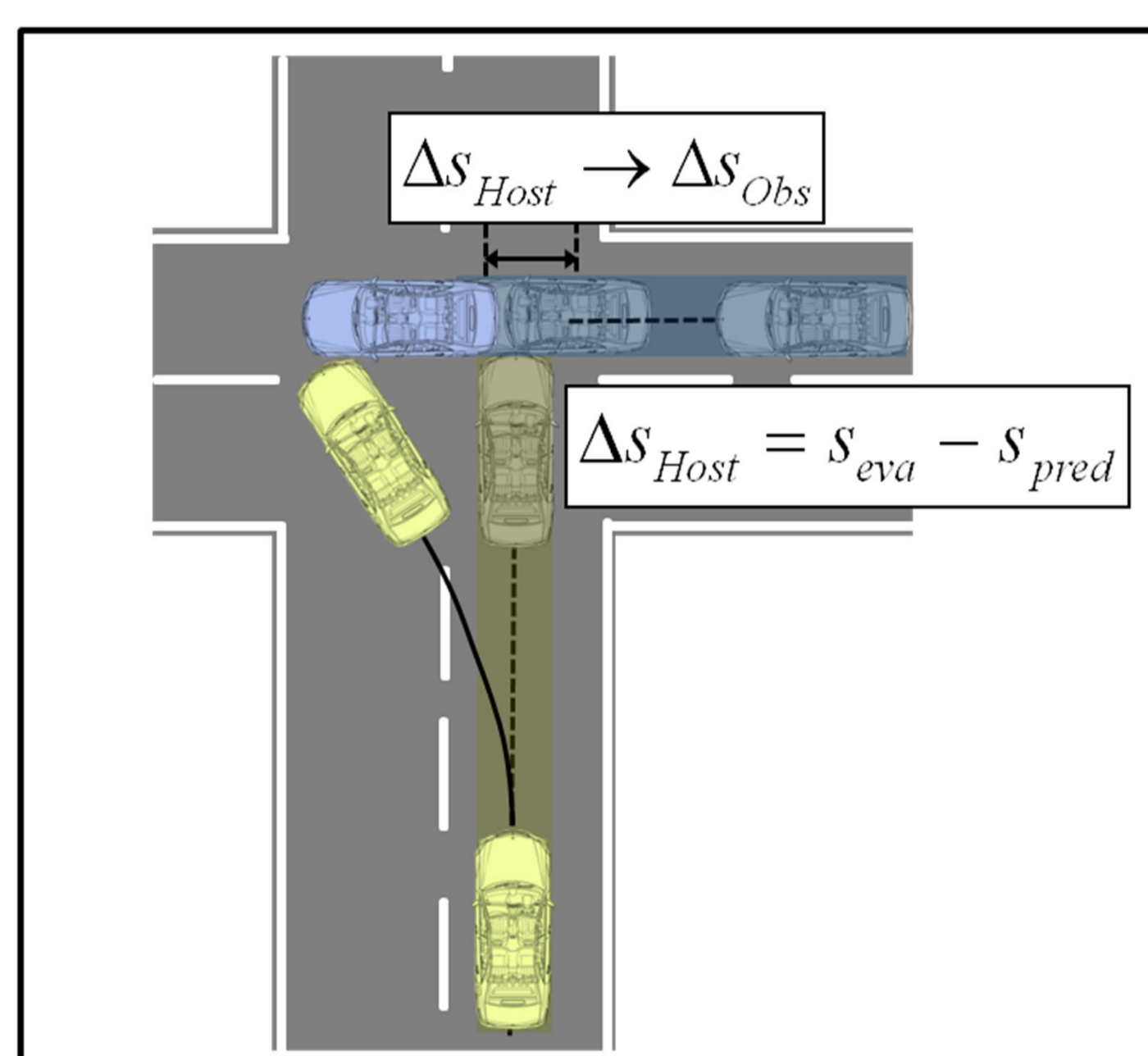
- Accurate Environment Detection
- Communication Device (dynamic objects)
- Laser Scanner (dynamic, static objects, free space)
- No Oncoming Traffic



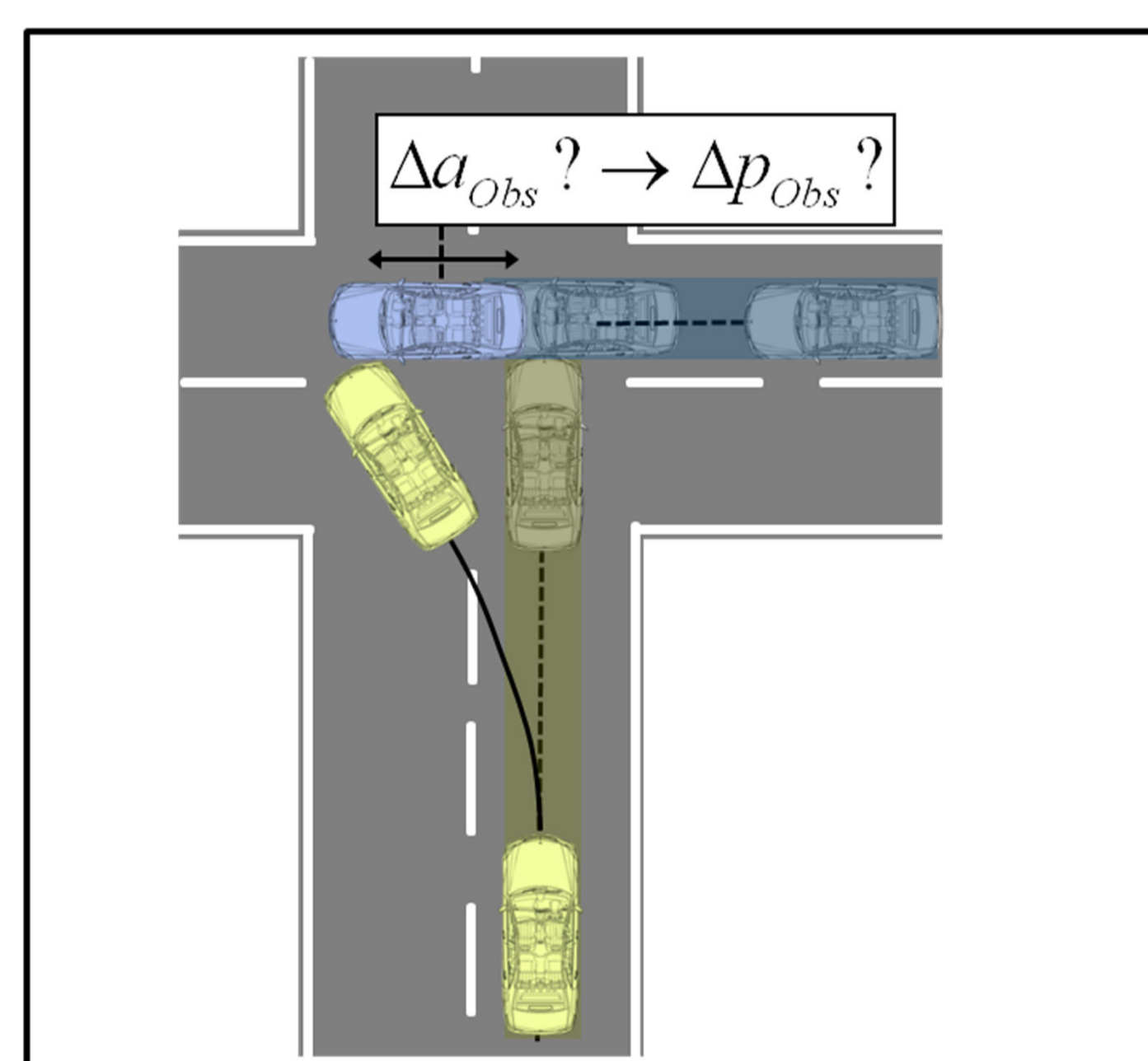
Challenges of Crossing Scenarios



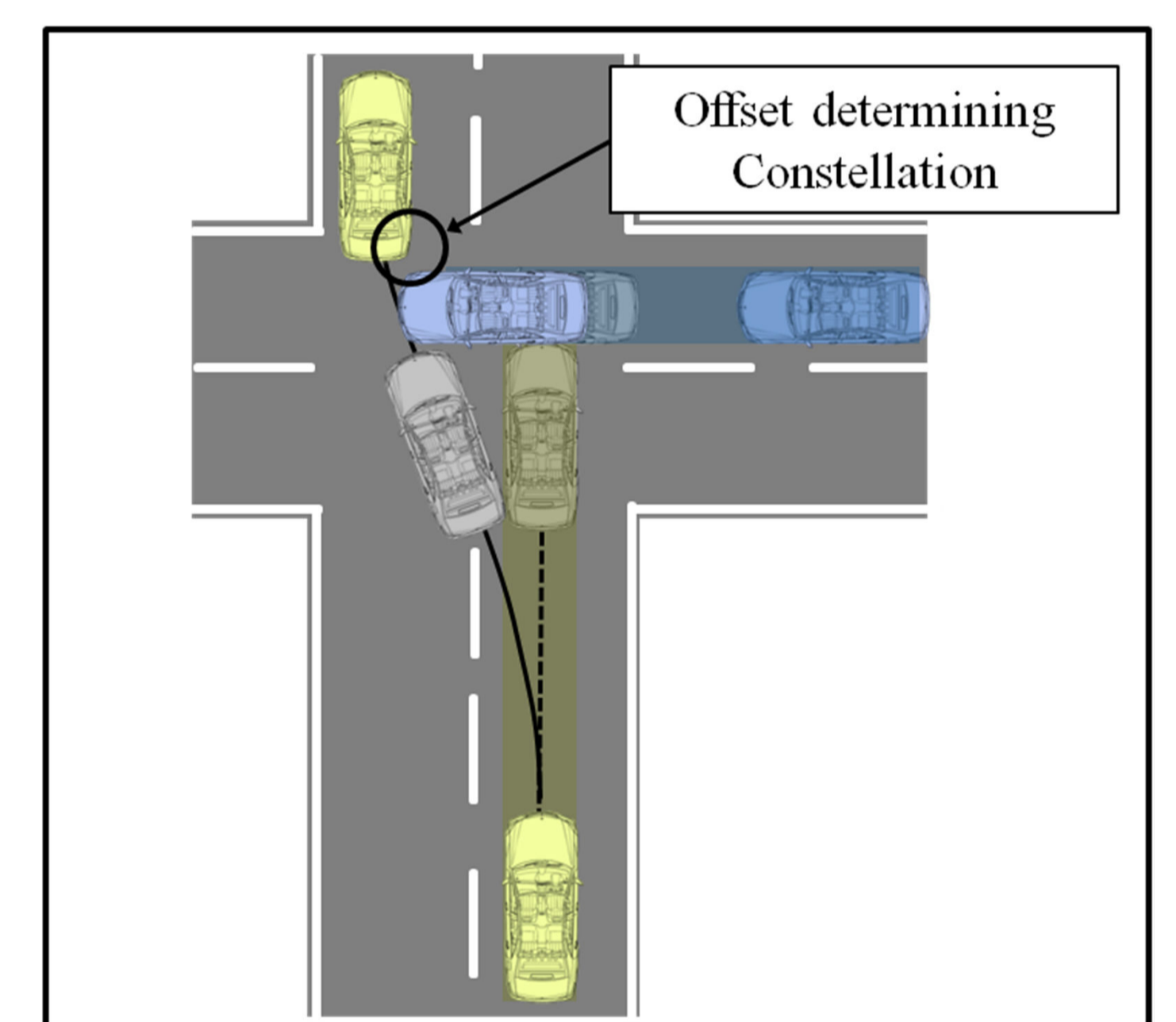
Longitudinal Scenario



Influence of Crossing Trajectories



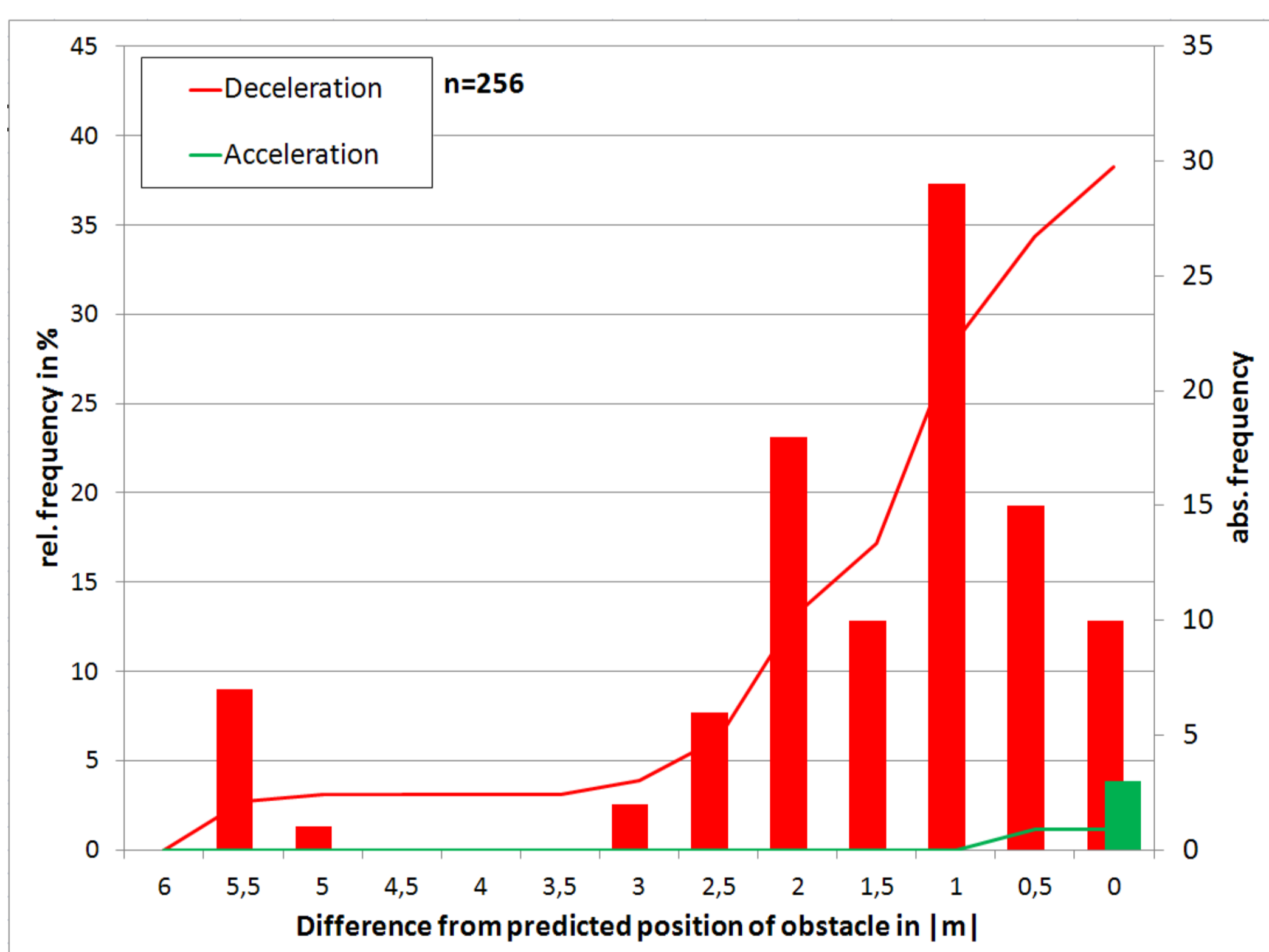
Influence of obstacles reaction while approaching



Crucial Constellation for Calculating Maneuver Offset

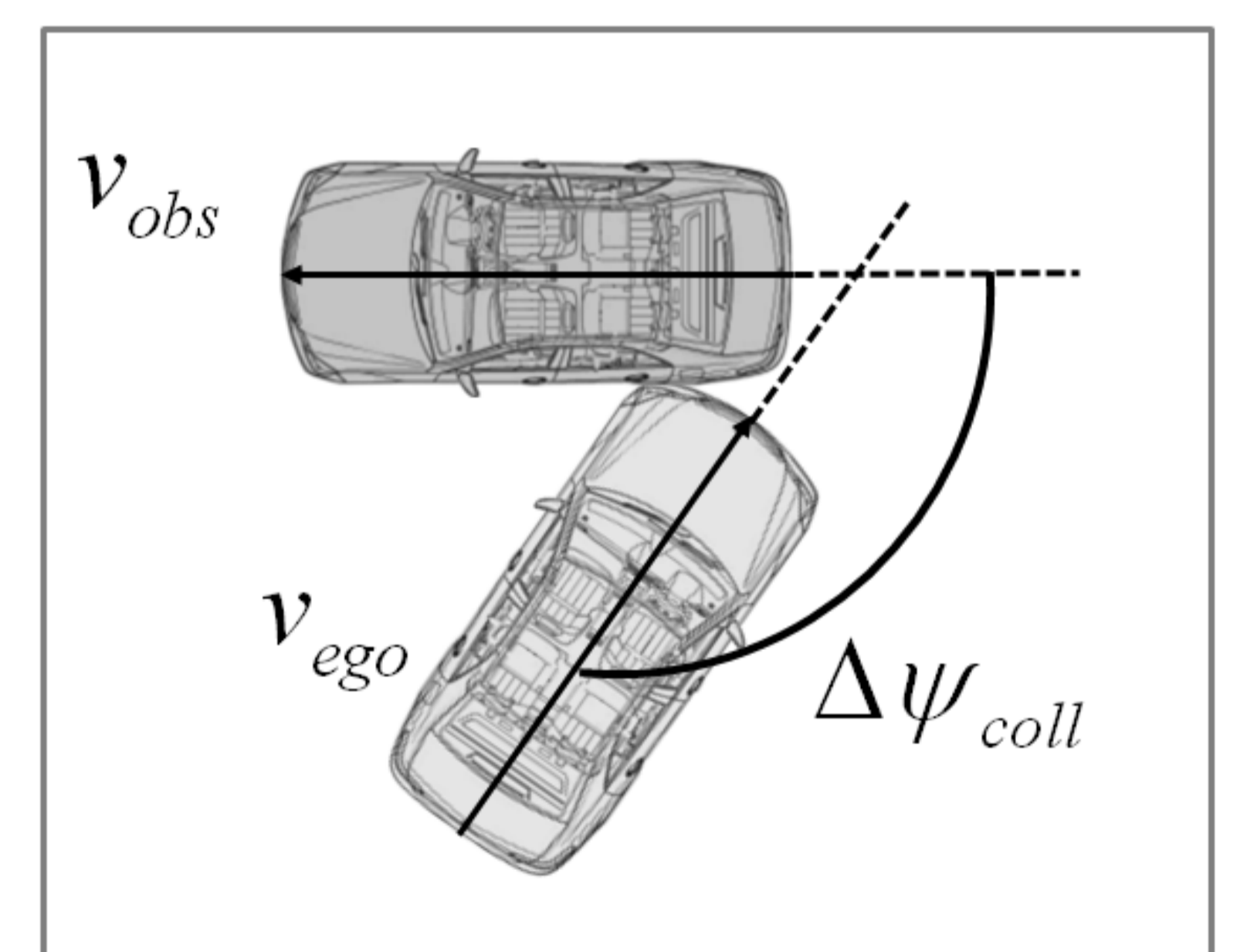
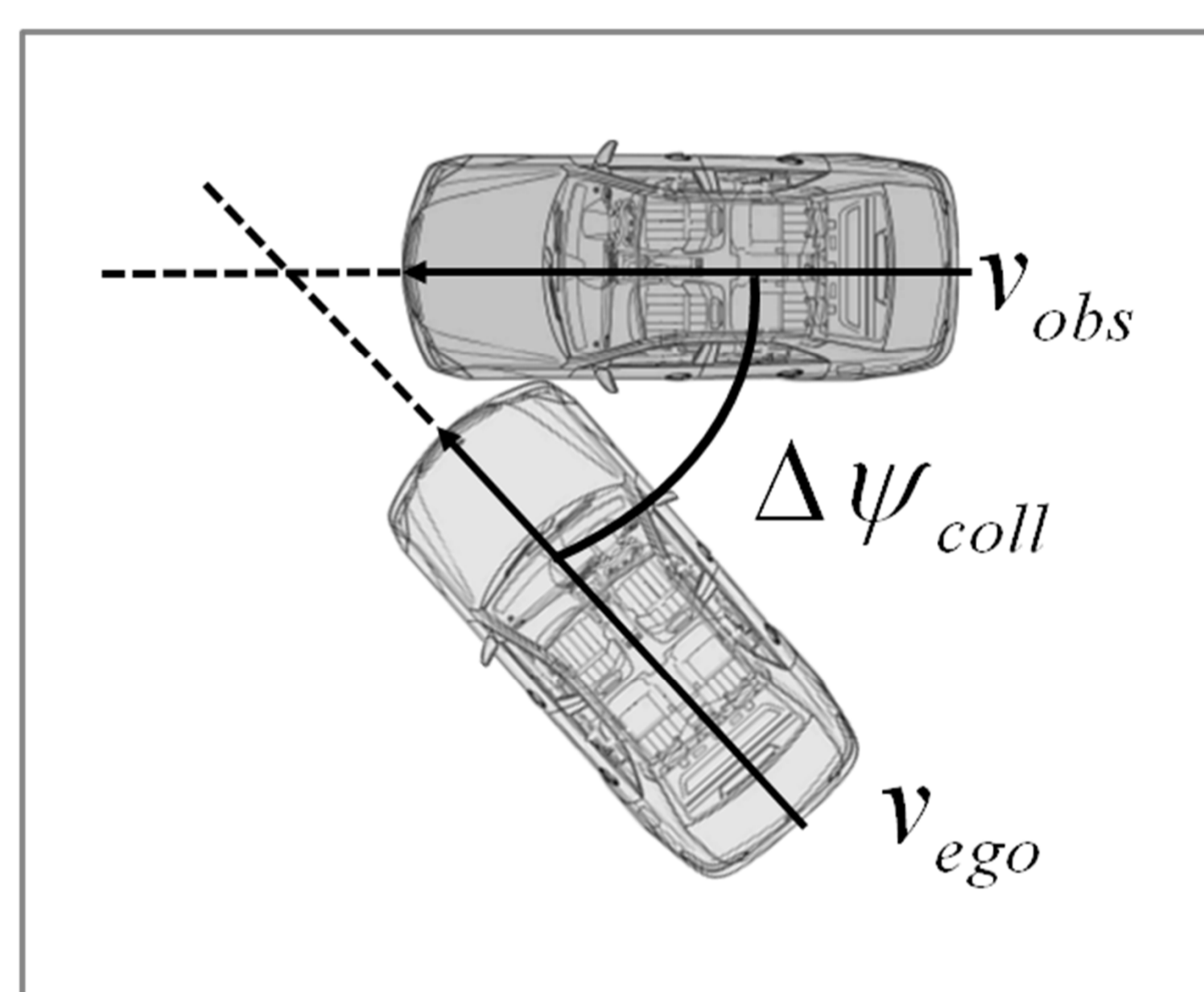
Direction of Evasion

Collision Avoidance



- Higher potential for evading against direction of the obstacles movement
- But: problems with validation due to unexpected actions of the obstacle

Collision Mitigation



- Temporal displacement of the collision in the future
- Reduction of collision angle
- Potential for avoiding the collision due to „cooperative behavior of the obstacle“

Evasion into the direction of the movement of the obstacle