

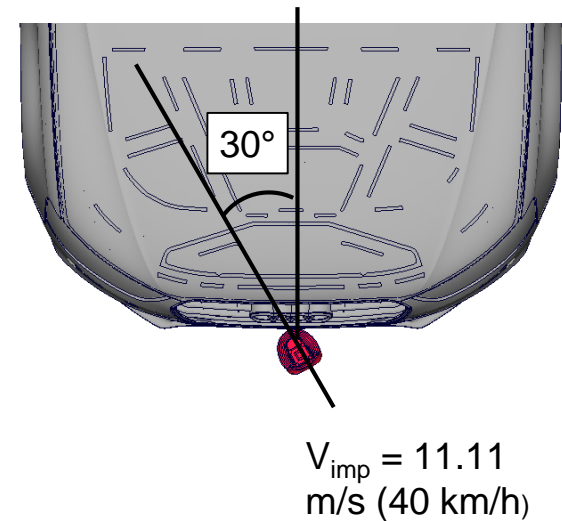
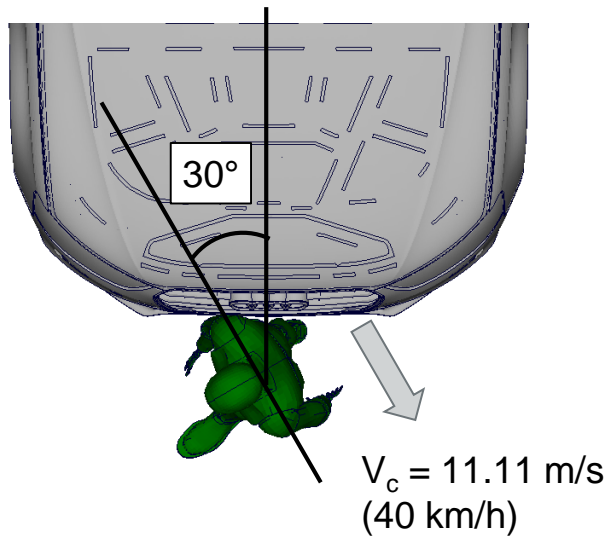
**UNECE GTR9-2 TF-BTA 11.9.2013**

Comparison of FlexPLI and THUMS behaviour at Y0/30°

## Comparison of FlexPLI and THUMS behaviour at Y0/30°

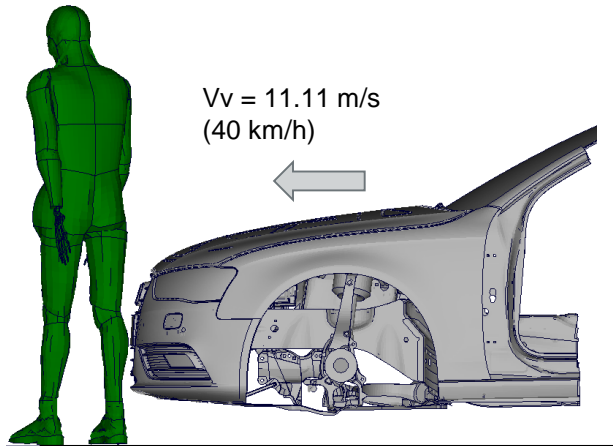
► Aim of the study

- Comparison of the behaviour from FlexPLI and Human Model THUMS at Y0 under an impact angle of 30°
- Influence of the car shape on the rotation of FlexPLI
- Amendment to TF-BTA-3-03e



# Comparison of FlexPLI and THUMS behaviour at Y0/30°

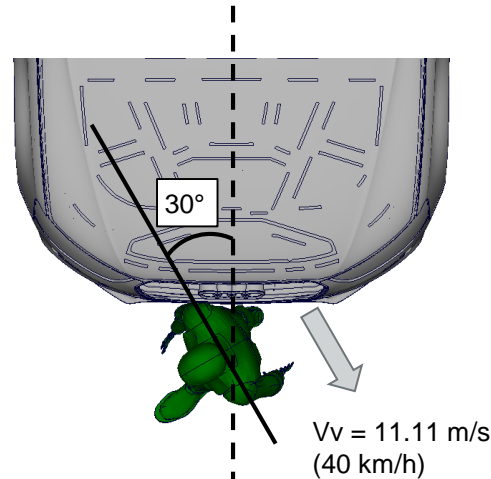
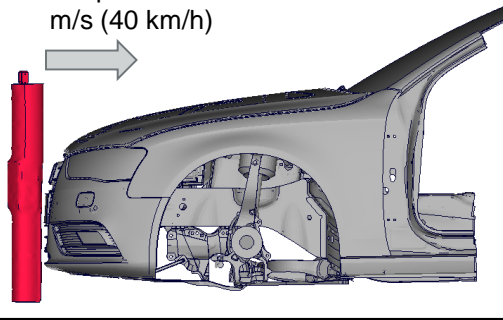
## ▶ Boundary conditions



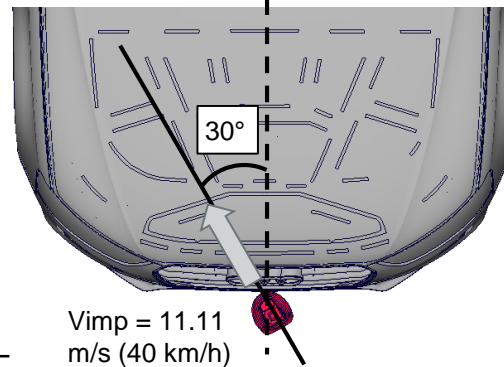
Slot 0: AU481PA\_EGS\_THUMS\_30deg\_000R

Gravity loads  
(9.81 m/s<sup>2</sup>)

Vimp = 11.11  
m/s (40 km/h)



000R

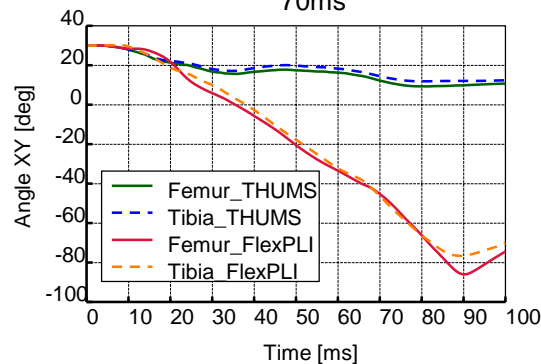
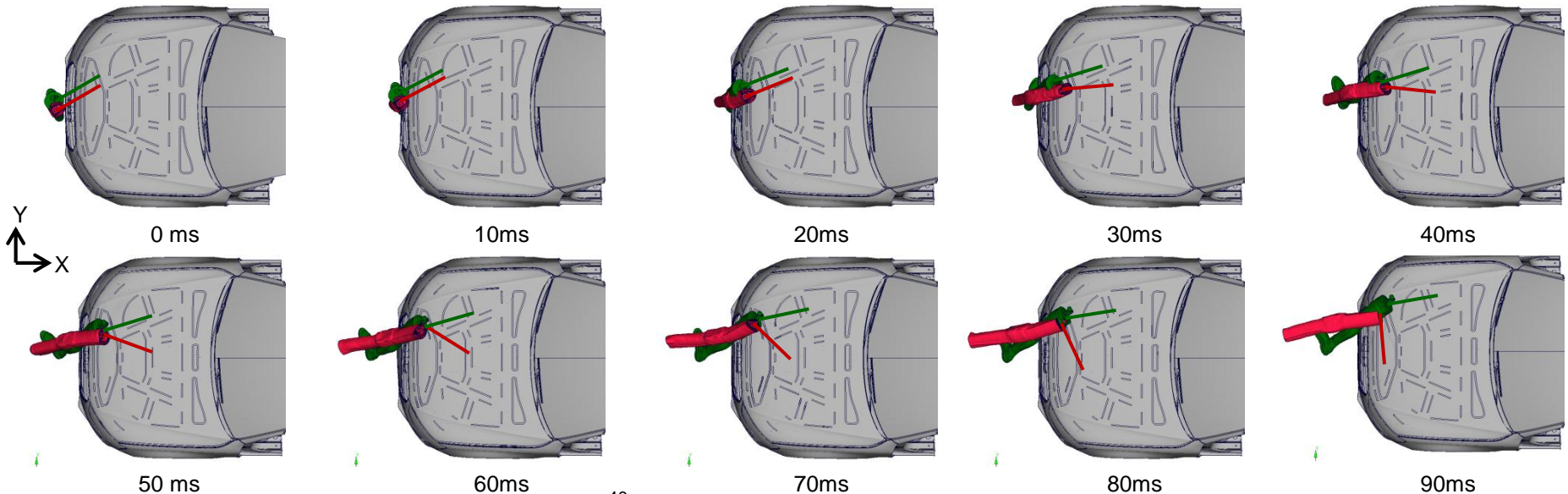


- ▶ Pedestrian model
  - ▶ THUMS\_VW\_Audi\_V3.0.12e with a rotation of 30°
  - ▶ Initial velocity applied to the vehicle with an angle of 30°
- ▶ FlexPLI
  - ▶ Same position of impact as THUMS with a rotation of 30°
  - ▶ Initial velocity applied to the impactor with an angle of 30°

# Comparison of FlexPLI and THUMS behaviour at Y0/30°

► Kinematics

- Difference of kinematics between the impacted leg of THUMS and the FlexPLI
- Angle of the FlexPLI in the plan XY is significantly higher than the angle of THUMS' leg



## Comparison of FlexPLI and THUMS behaviour at Y0/30°

▶ Conclusion

- ▶ Strong lateral rotation of FlexPLI even at Y0 under an impact angle of 30° as from 20 ms
- ▶ Findings of TF-BTA-3-03e can be confirmed
- ▶ Comparison with THUMS show that the impactor can not reproduce the behaviour of the human leg in the outer area