Relationship of Impact Location between Leg and Head in Lateral Car to Pedestrian Impact

10th IWG-DPPS
March 2021

Japan Automobile Standards Internationalization Center
Test Results

PMHS vs SAE Buck @ 40km/h


Lateral movement of the head until HIT seems to be small.
Simulation Results
HBM vs Small Sedan @ 40km/h

Lateral movement of the head until HIT seems to be small

HBM: Takahashi et. al., 2015
Lateral movement of the head until HIT seems to be small

HBM: Takahashi et. al., 2015
Simulation Results
HBM vs SUV @ 40km/h

Center
Initial Head Location

Outer
Initial Head Location

HBM: Takahashi et. al., 2015

Lateral movement of the head until HIT seems to be small
Test Results
Polar II vs Production Cars @ 40km/h

Lateral movement of the head until HIT seems to be small
Test Results
Hybrid II AM50 vs Production Cars @ 40km/h
Tested Vehicle

Sedan A
Sedan B
Sedan C
Minivan A
Kei-Car A
Lateral movement of the head until HIT seems to be small.
Test Results

Hybrid II AM50 vs Production Cars @ 40km/h

Lateral movement of the head until HIT seems to be small
Test Results

Hybrid II AM50 vs Production Cars @ 40km/h

Lateral movement of the head until HIT seems to be small
Lateral movement of the head until HIT seems to be small
Test Results

Hybrid II AM50 vs Production Cars @ 40km/h

Lateral movement of the head until HIT seems to be small
Test Results

Hybrid II AM50 vs Production Cars @ 40km/h

Lateral movement of the head until HIT seems to be small
Lateral movement of the head until HIT seems to be small in PMHS tests, HBM simulations and ATD tests.

It can be said that the impact location of the head is regarded as same as that of the leg.