# IWG-DPPS-25-07

Background on preamble proposal for GV Models

GV model Check –
Occurrence of Bottoming in rigid impactor simulation

Since GV model in IWG-DPPS is a tool to develop the qualification corridor and to confirm the quality of the HBM used in the calculation of HIL and HIT, representativeness of the GV model should be described (to make sure that the qualification corridor is appropriate one based on the realistic condition)
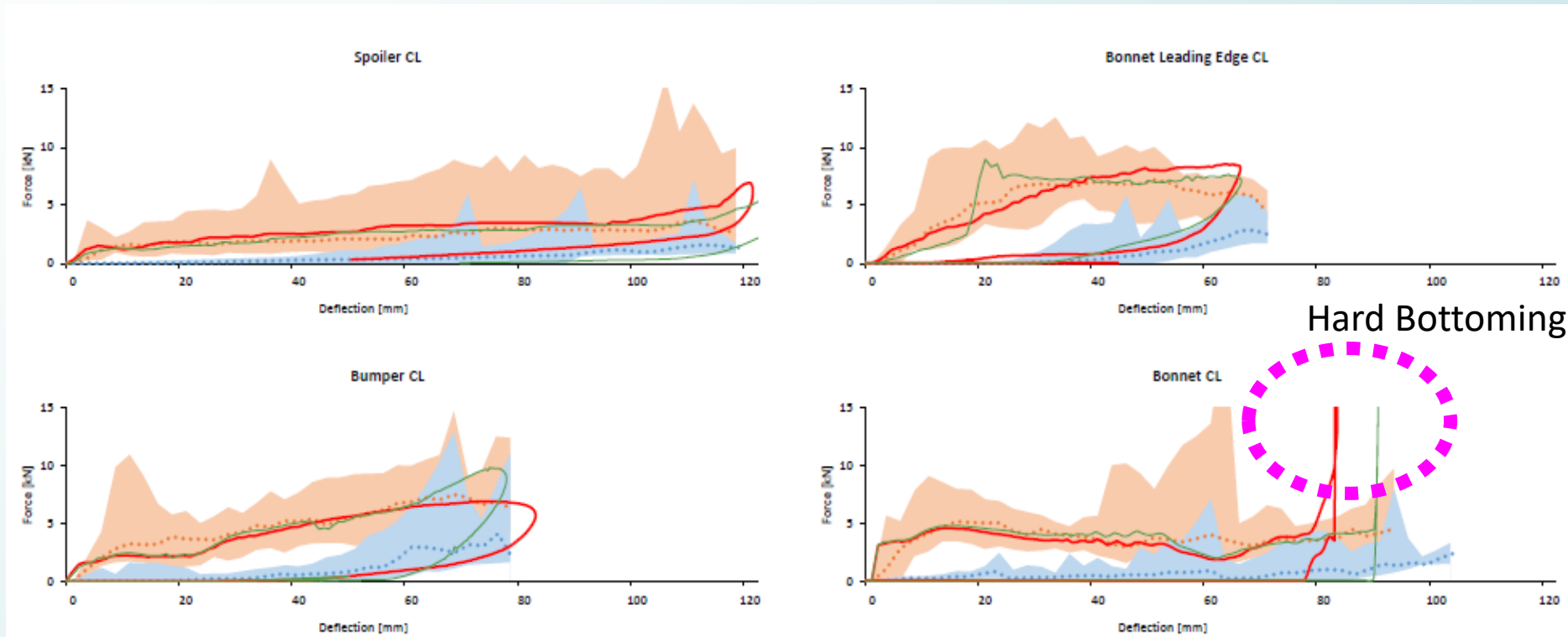
Hard Bottoming

- Unrealistic bottoming is occurred in rigid impactor simulation
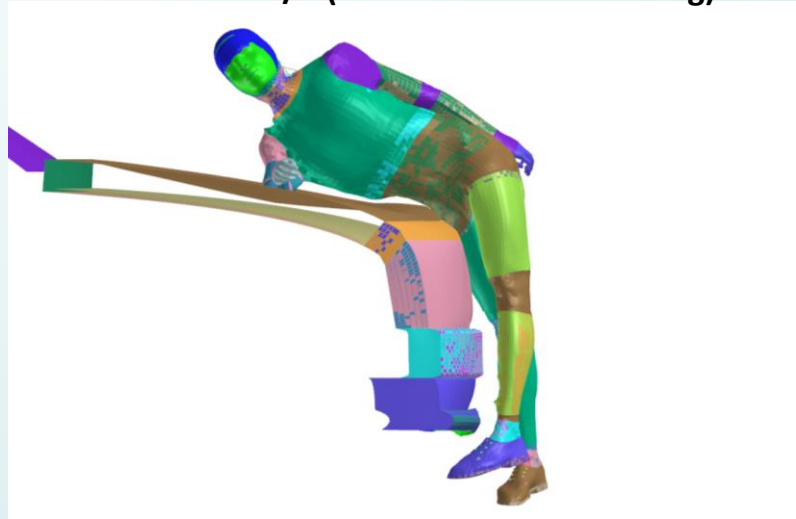- The influence of this bottoming on head impact location and HIT is unknown

GV model Check –
Occurrence of Bottoming in a reference model

Setting of GV model
- Stress of foam material in compression increases exponentially after 80% strain to keep the calculation stability
- Thickness of bonnet foam is 100 mm regardless of the GV models (FCR, SUV and RDS)
- Stopper layer is set 89 mm stroke for FCR and SUV, set 64 mm for RDS to represent early bottoming in RDS

SUV AM50 50km/h (at the start of bottoming)

At the time when the compression ratio of foam is 80% (80mm stroke)
*Since stopper is set at 89 mm stroke, bottoming is occurred by the characteristic of foam material

- **The influence of occurrence of bottoming on the head impact location and the HIT is unknown**
- **The influence may become larger due to the early start of the bottoming in SUV**