TABLE I
SUBJECT CHARACTERISTICS

Subject	Age	Stature (cm)	Weight (kg)
Vol 06	71	164.0	81.0
Vol 07	71	176.5	99.1
Vol 08	85	165.3	78.2
Vol 09	67	169.0	88.2
THOR-50M	--		82.0

III. INITIAL FINDINGS

Shoulder seat-belt forces

The THOR-50M dummy engaged slightly earlier with the seat belt and the peak average upper shoulder belt force was lower than that measured in the volunteers (1131 N vs 1252 N). Figure 2 (left) shows the average force value (solid line) and the corridor corresponding to ± 1 standard deviation, and illustrates that the corridors overlap for most of the duration of the deceleration.

Head kinematics in the sagittal plane

Figure 2 (right) shows that the THOR-50M peak forward excursion of the mid-point between the bilateral External Auditory Meatus (EAM) was substantially higher than that observed in the volunteer tests.

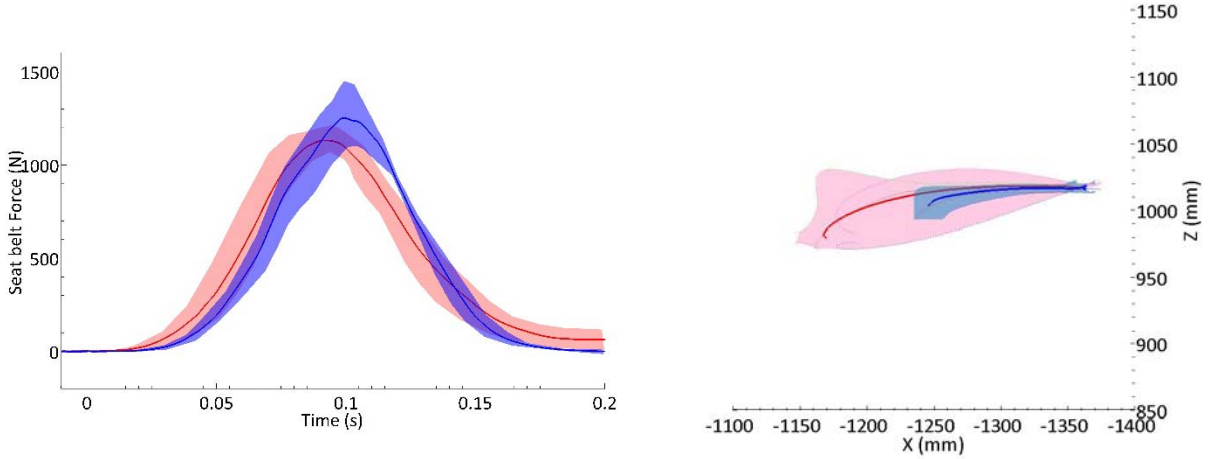

Fig. 2. Left: time history of upper shoulder-belt force. Right: comparison of sagittal trajectories of the head EAM. Both: THOR-50M (red) and volunteers (blue).

IV. DISCUSSION

The THOR-50M approximated accurately the shoulder-belt forces experienced by the elderly volunteers, but failed to capture the kinematics of the head in the sagittal plane. This is most likely due to the volunteers' neck muscle activity, which greatly influenced the trajectory of the head, especially at this low-speed configuration.

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VI. REFERENCES

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