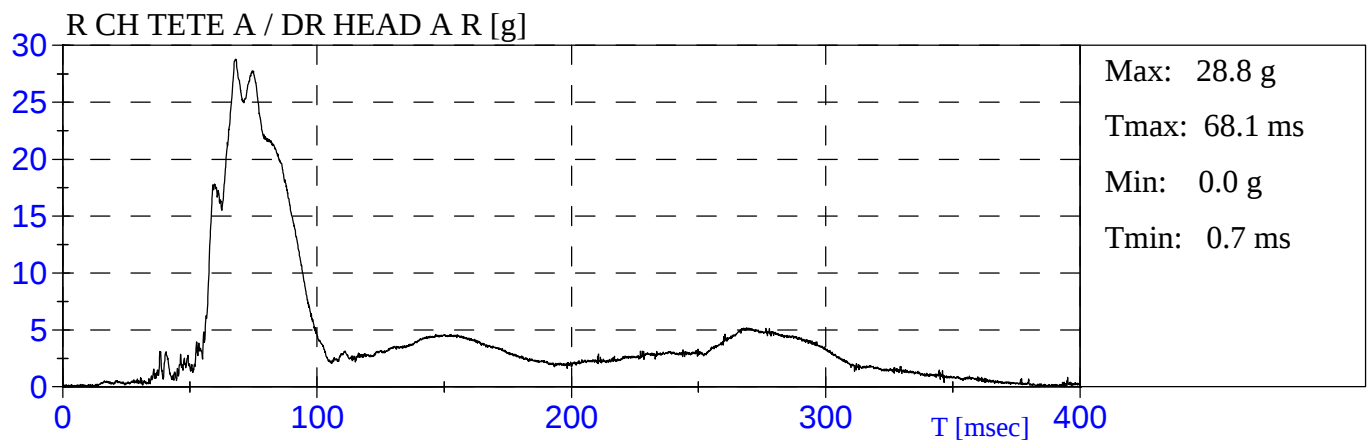
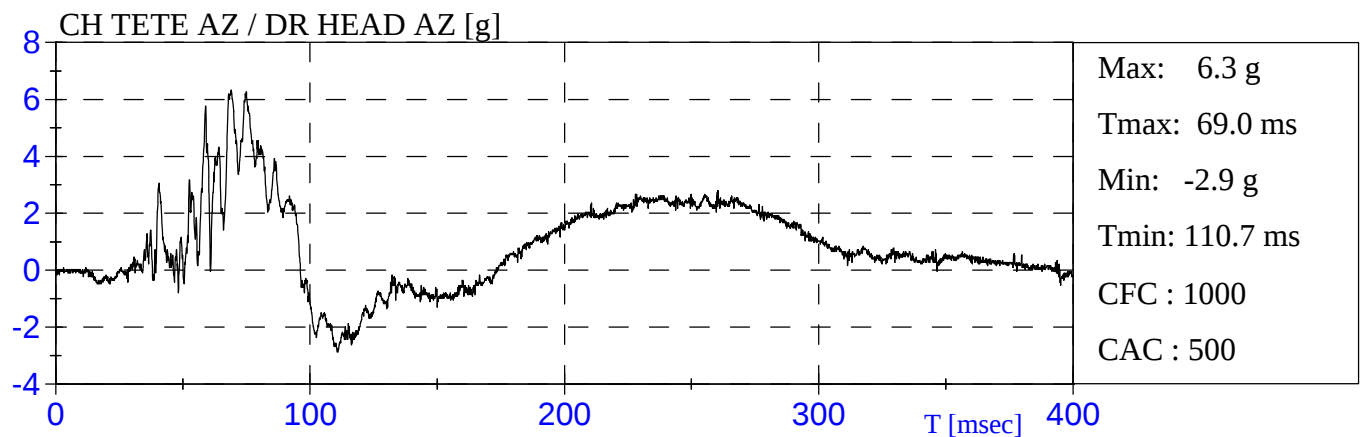
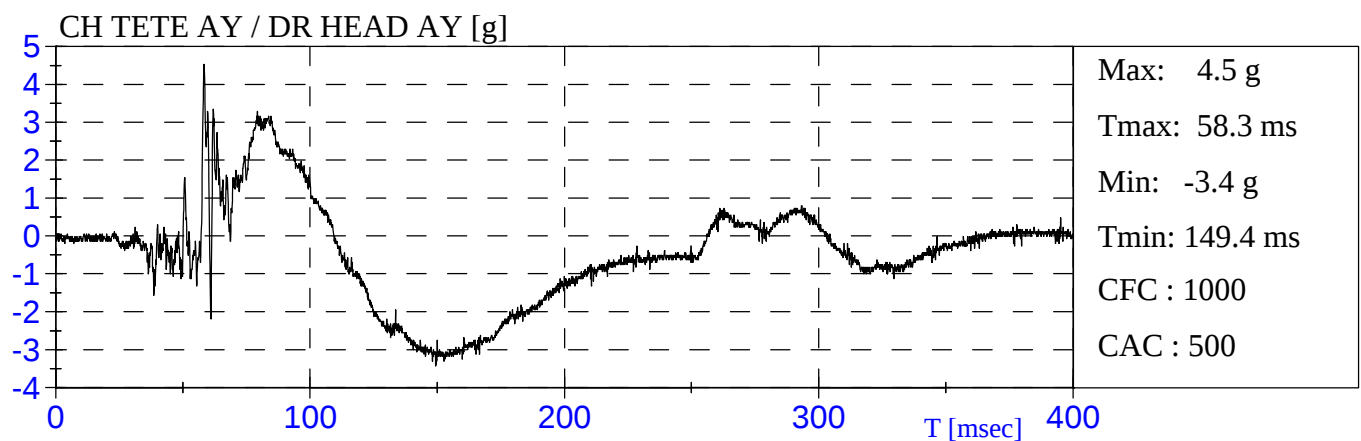
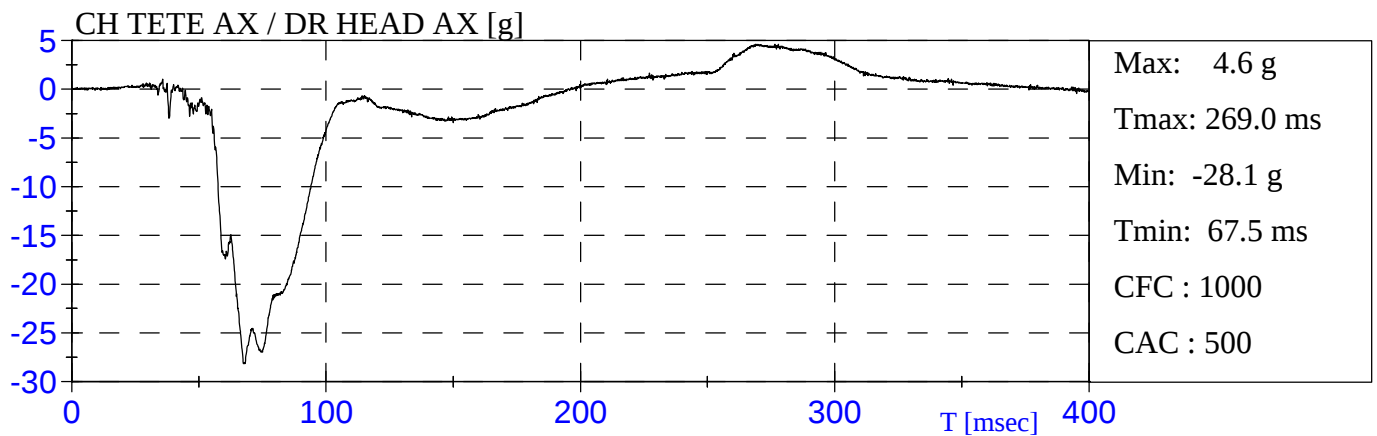




Nom du client Client Name	TRANSPORT CANADA
Type de véhicule Type of Vehicle	SATURN VUE 2003
Numéro de TC Tc Number	TC03-233
Numéro de contrat Contract No	04-6008
Acquisition de données selon Data Acquisition according to	SAE J211/1 MAR 95
Date de l'essai Test date	2004-03-05
Titre du projet Project Title	COLLISION DE RECHERCHE COLLISION FRONTALE RESEARCH COLLISION TEST FRONTAL CRASH
MANNEQUIN / DUMMY	
Chauffeur Driver	HYBRID III 5% F IR
Passager Passenger	HYBRID III 5% F IR
Passager 1 (arrière gauche) Passenger 1 (rear left)	Q6
Passager 2 (arrière centre) Passenger 2 (rear centre)	HYBRID III 6Y

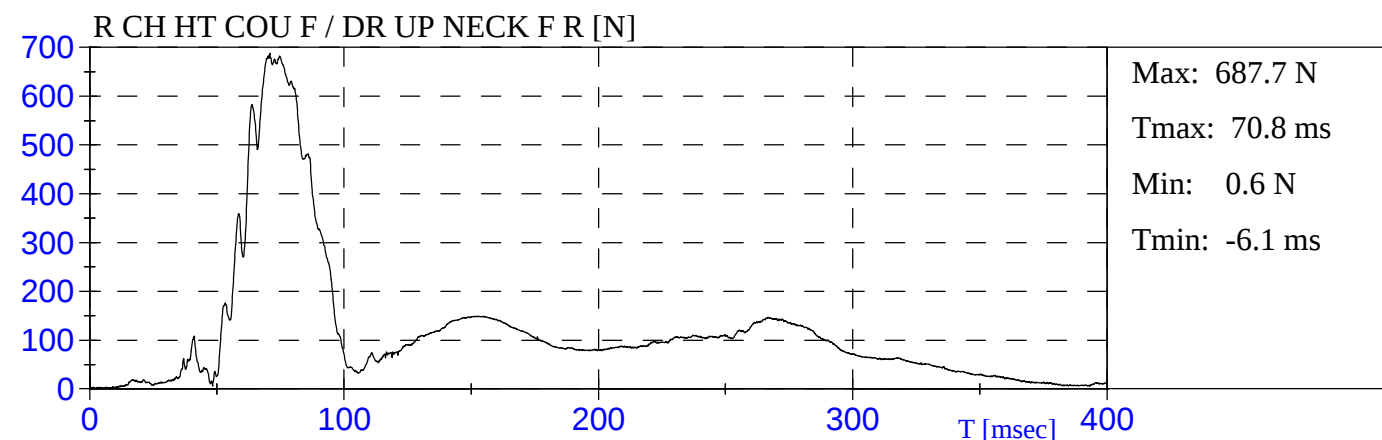
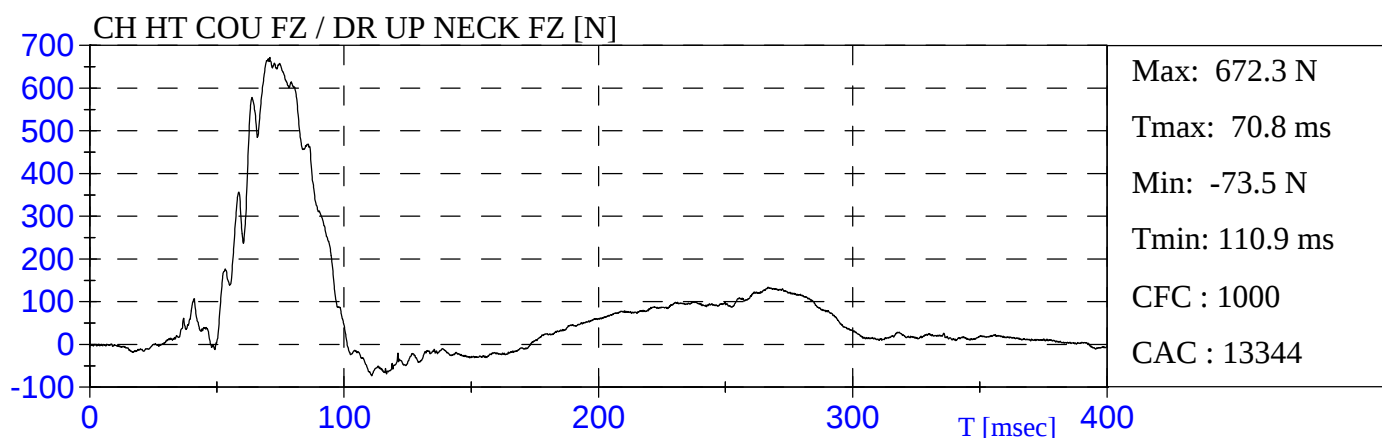
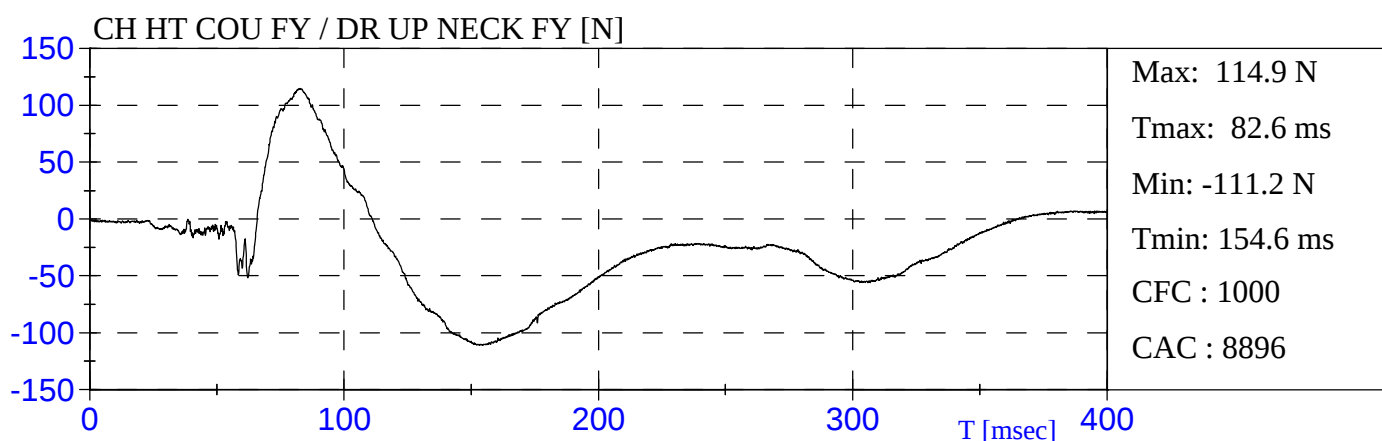
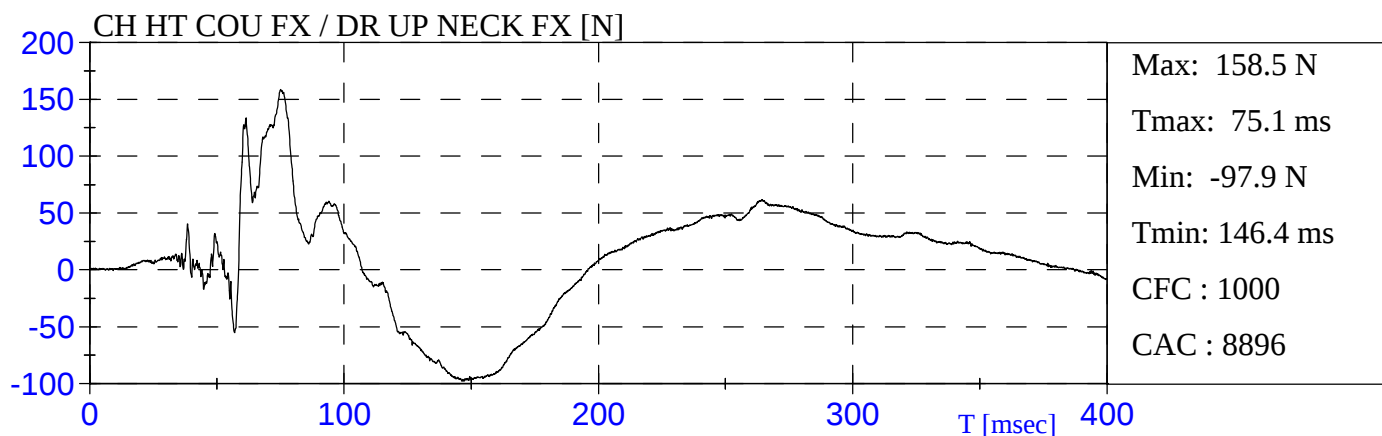


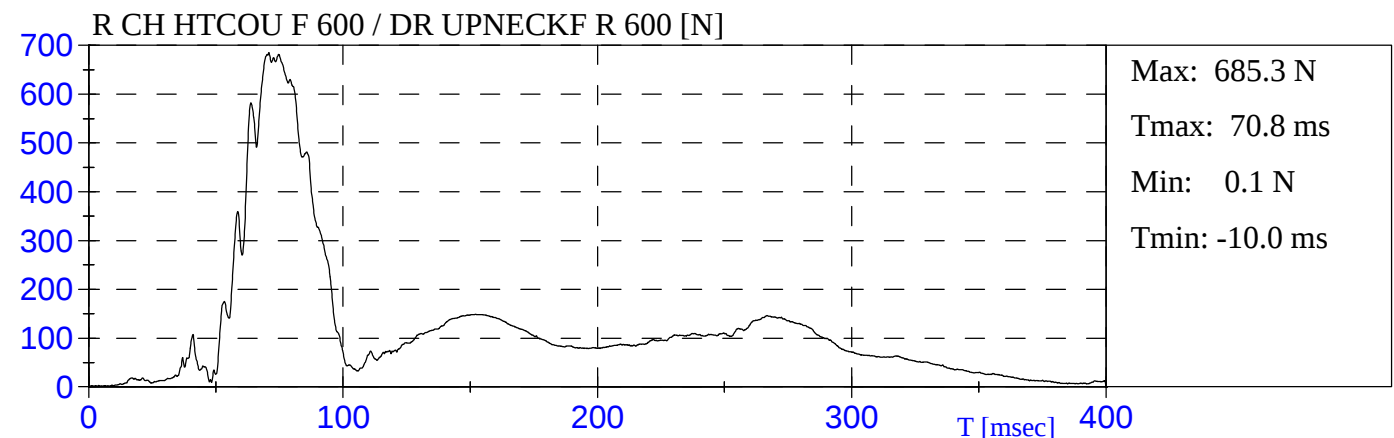
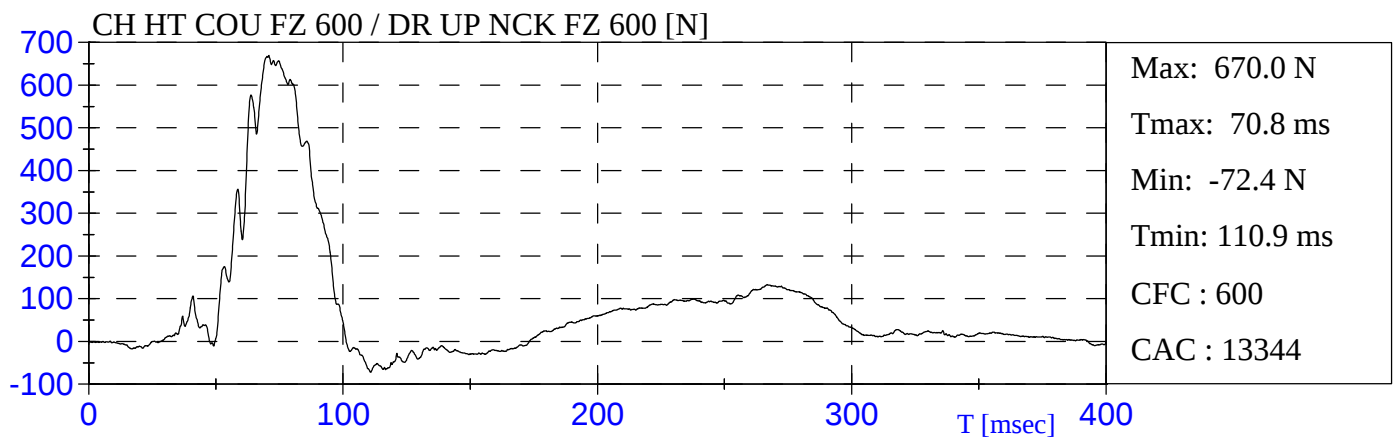
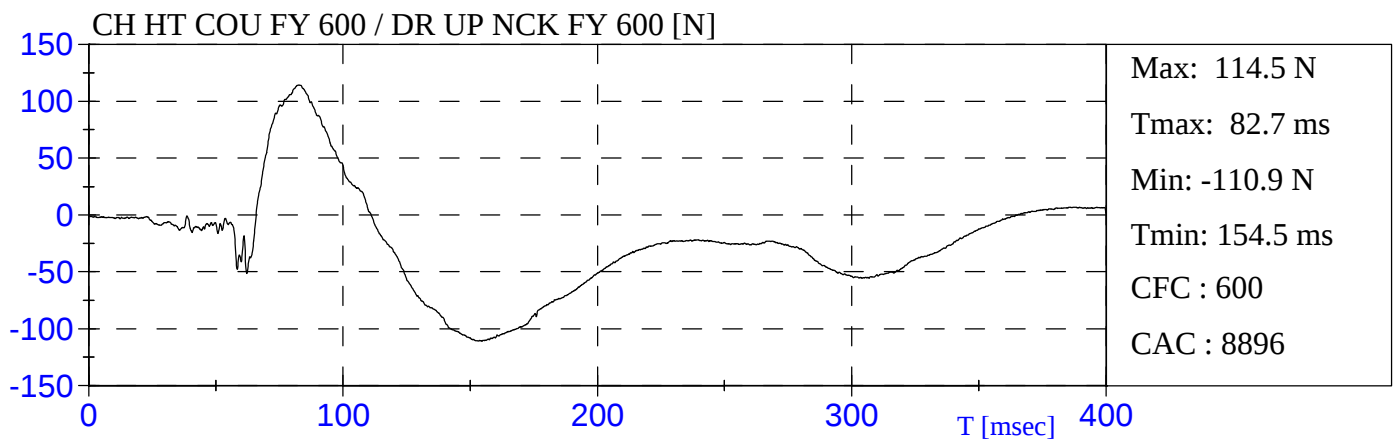
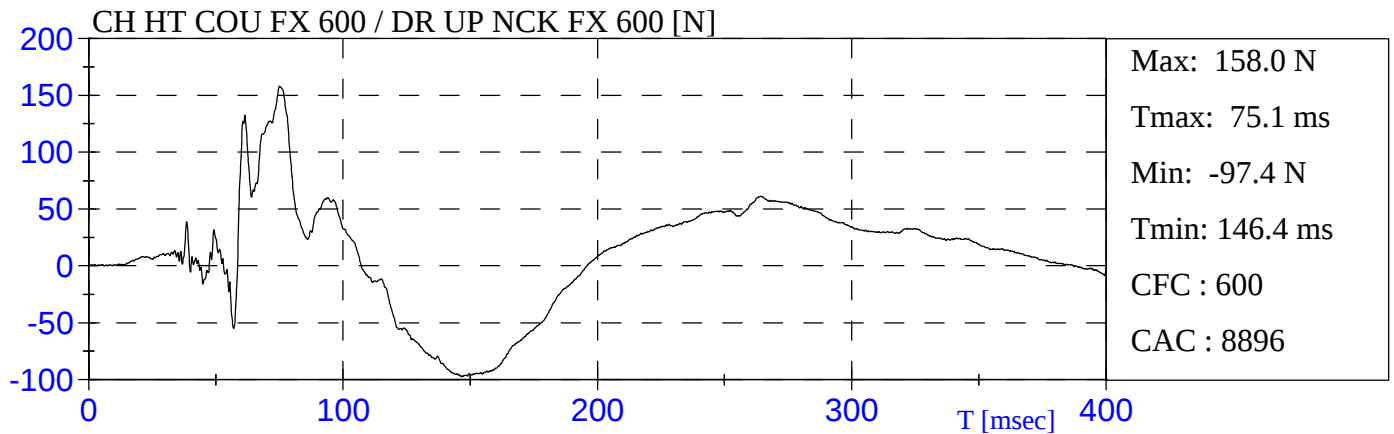


COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05

N° TC / TC No.: TC03-233



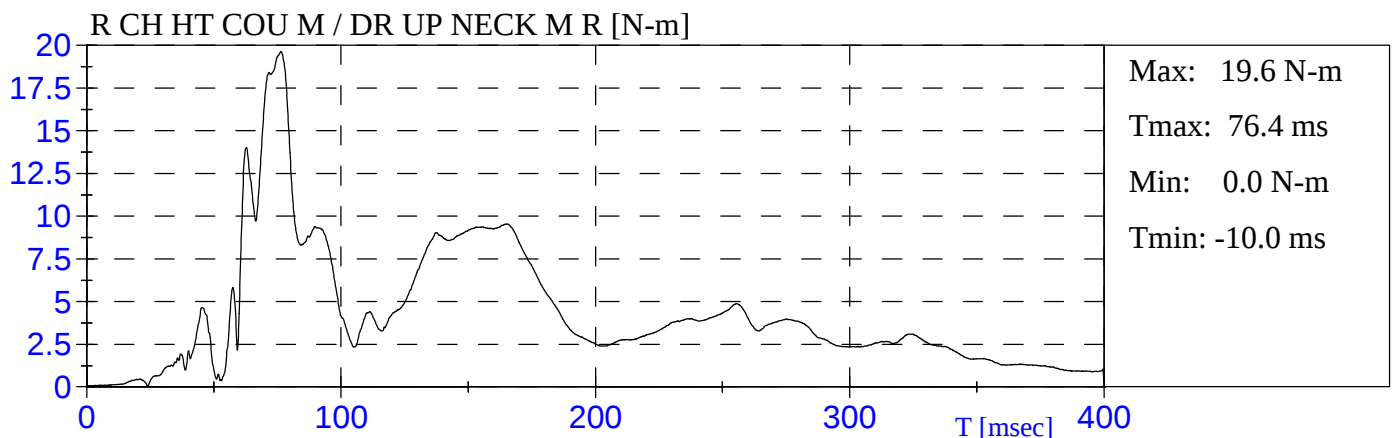
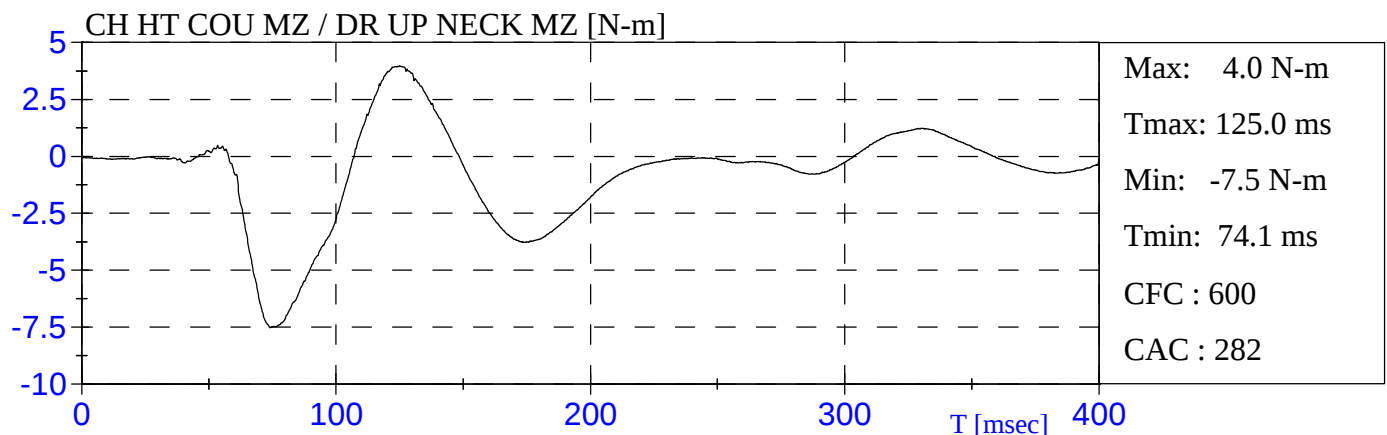
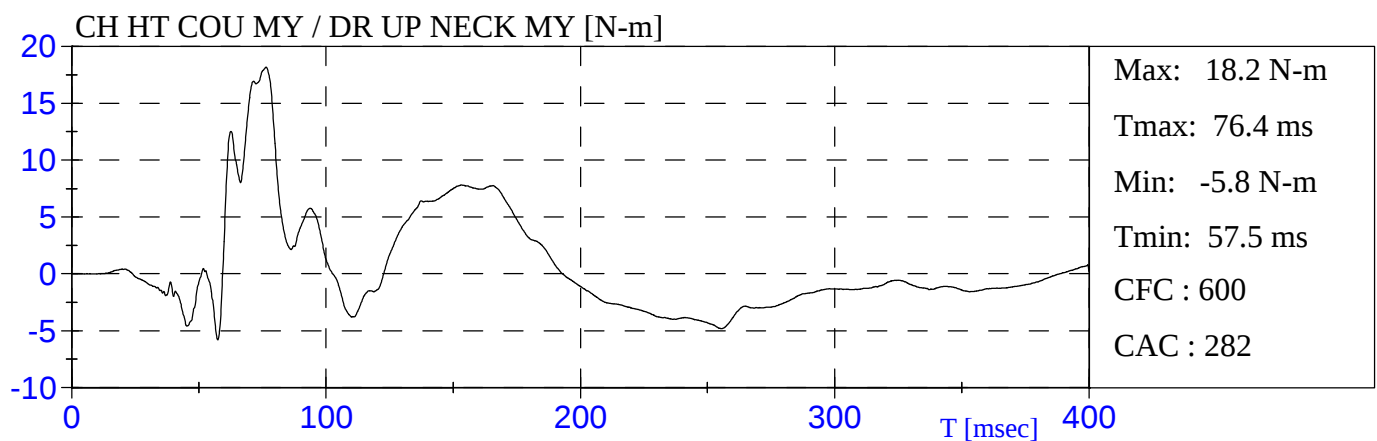
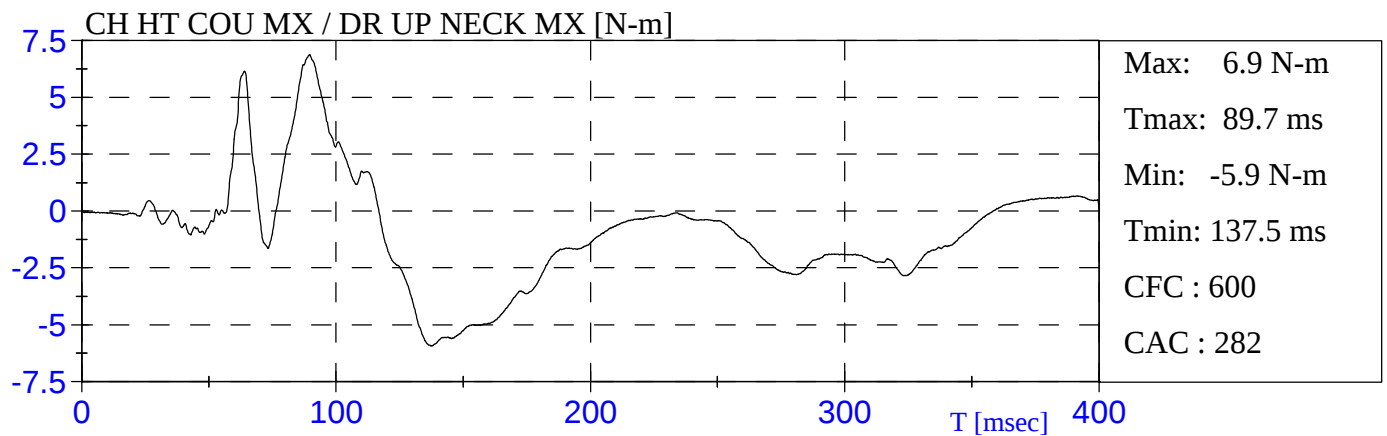


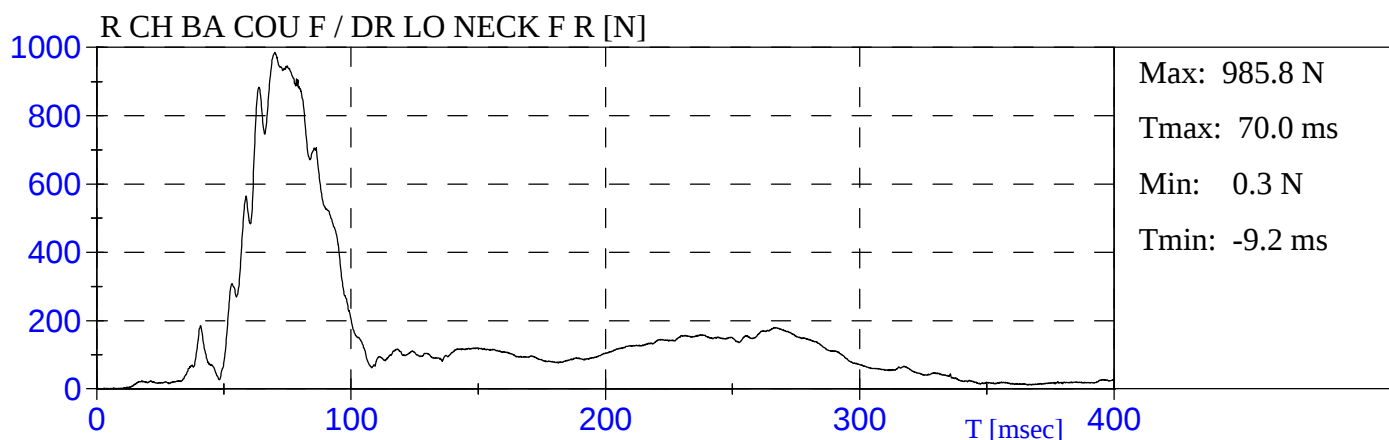
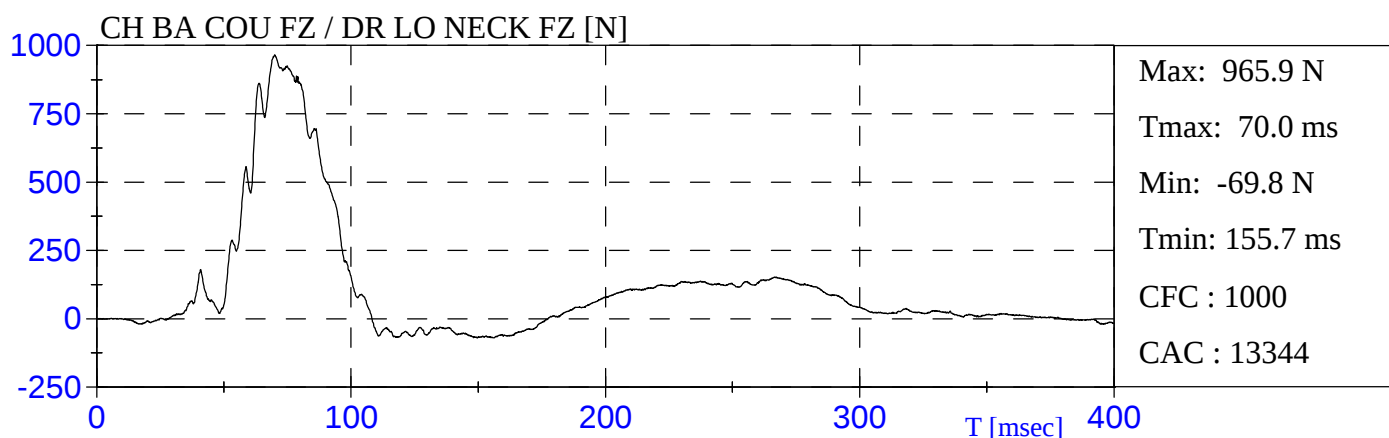
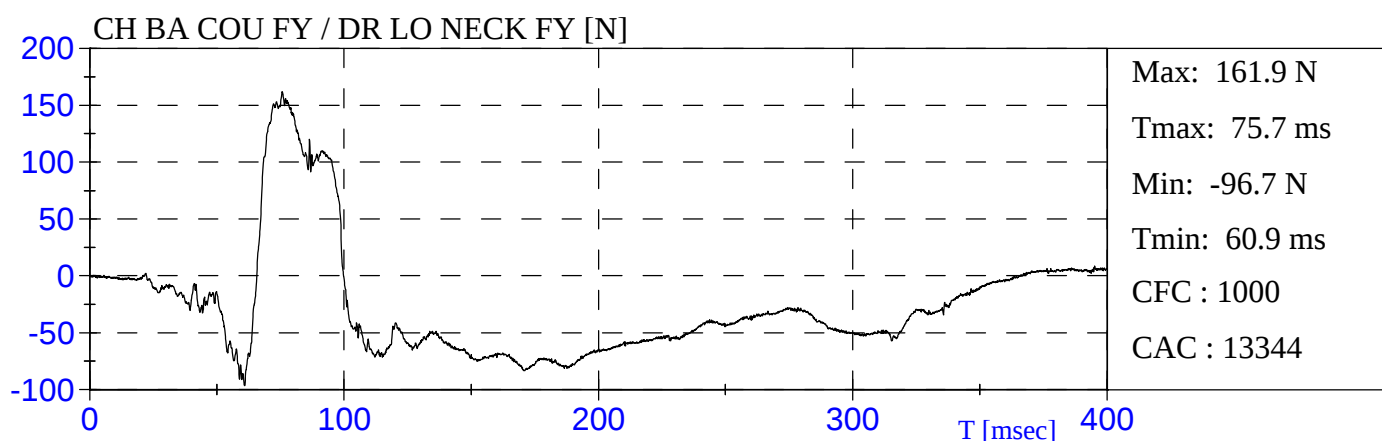
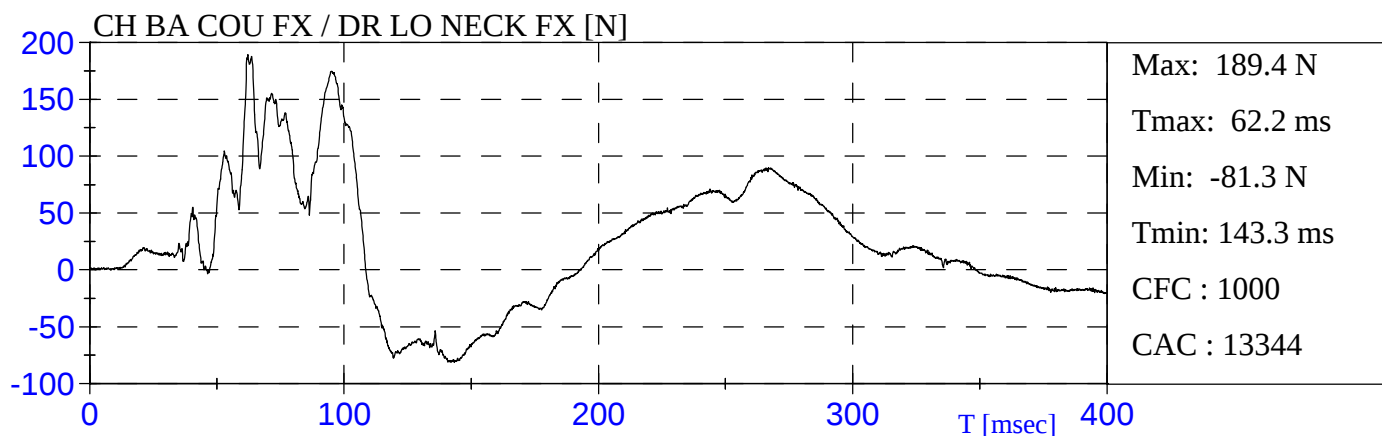


COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05

N° TC / TC No.: TC03-233



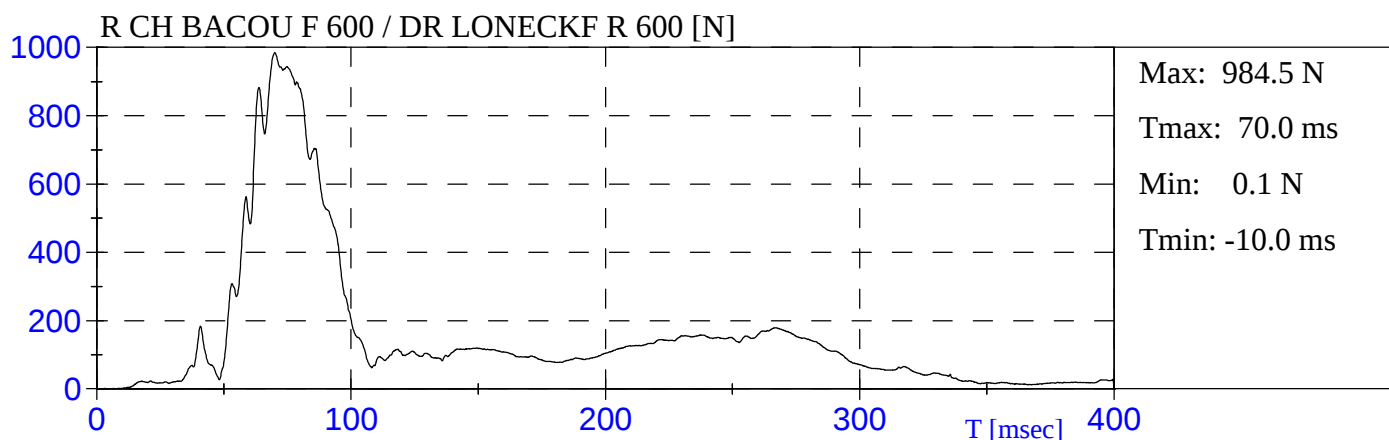
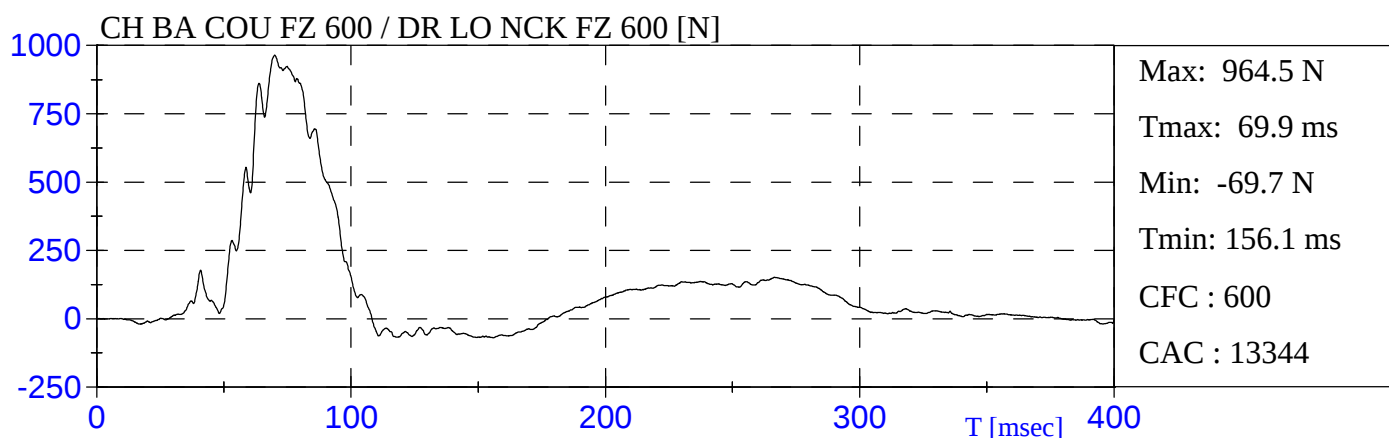
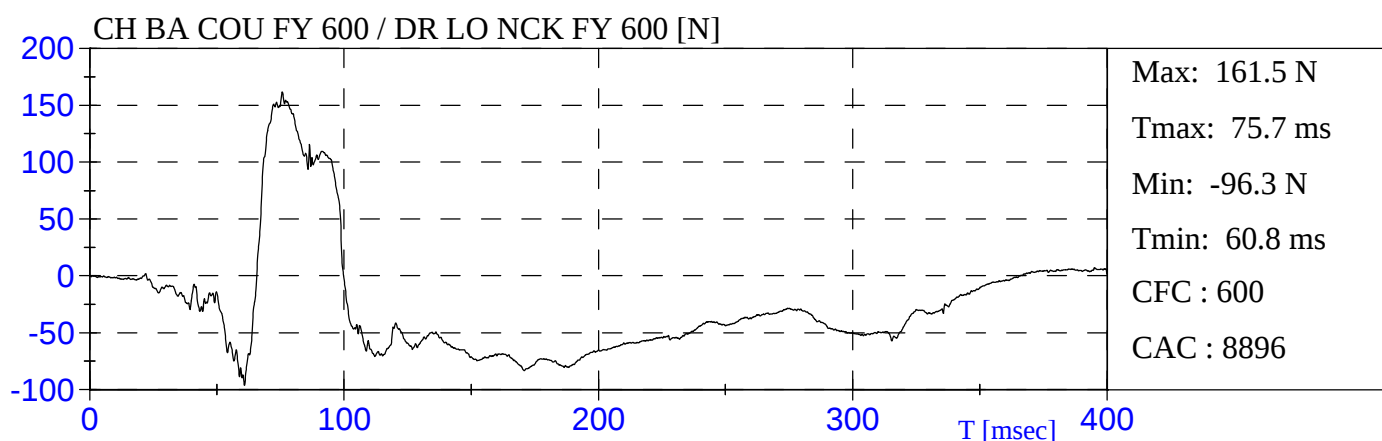
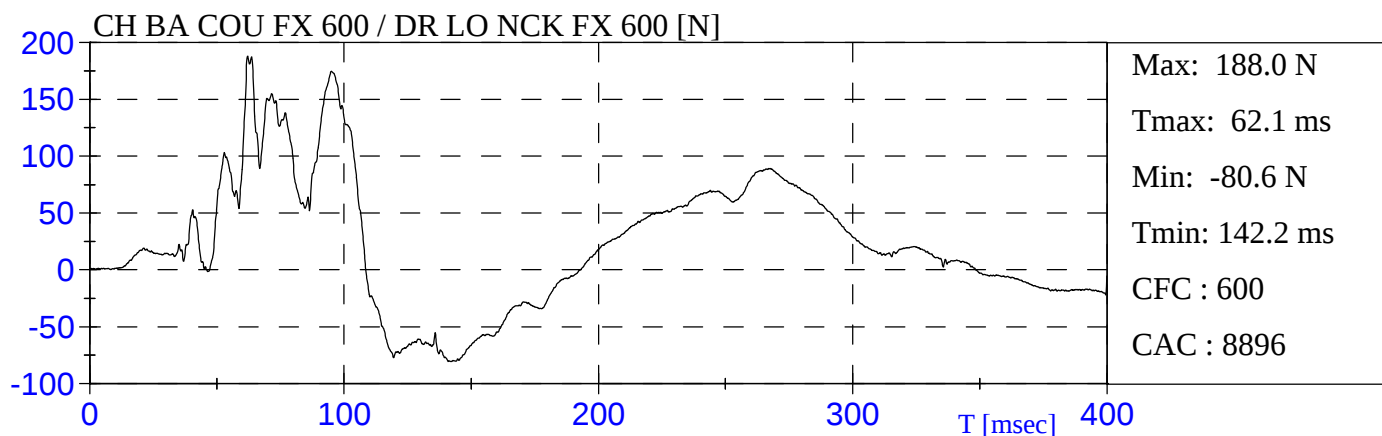


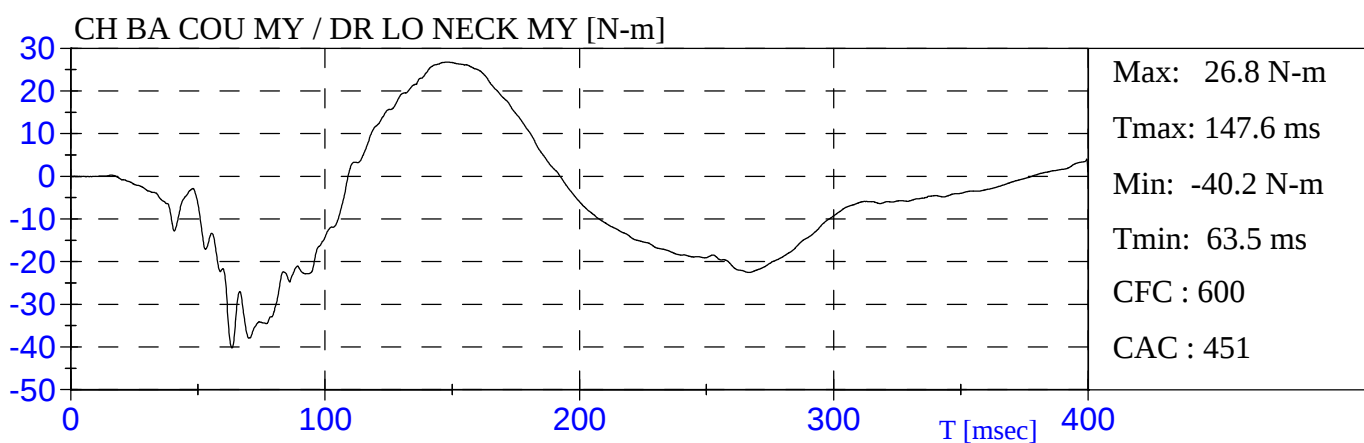
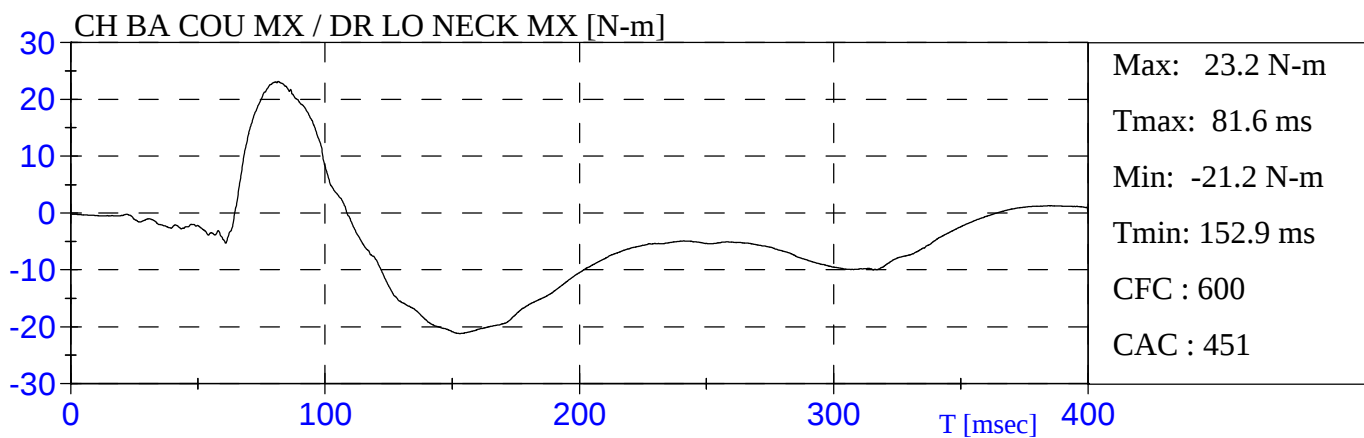


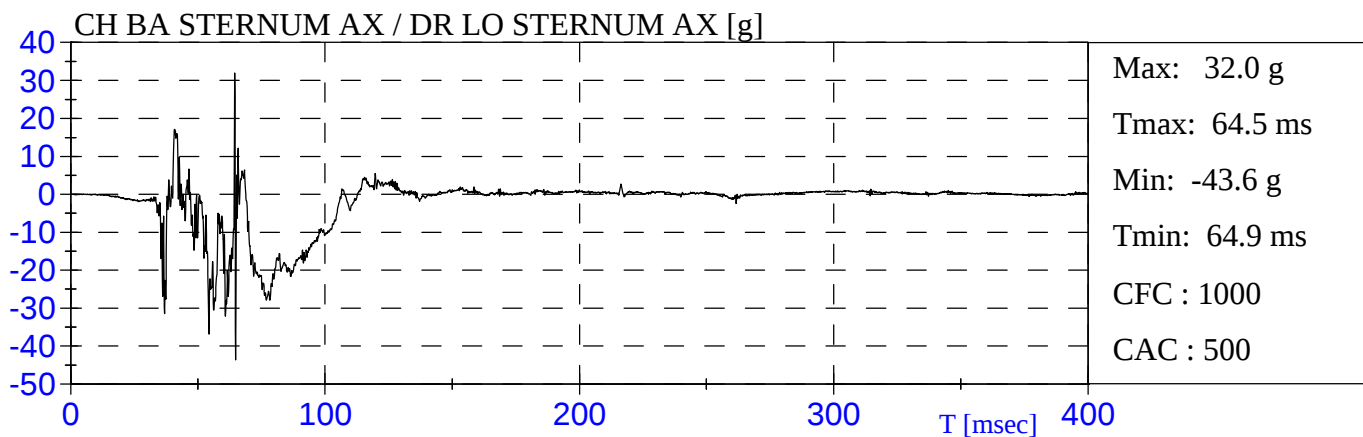
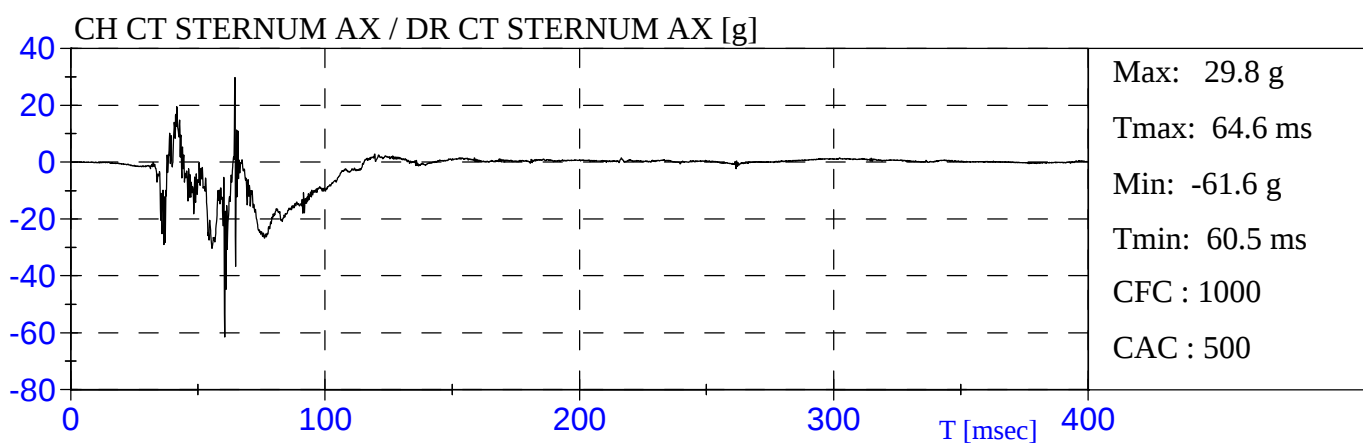
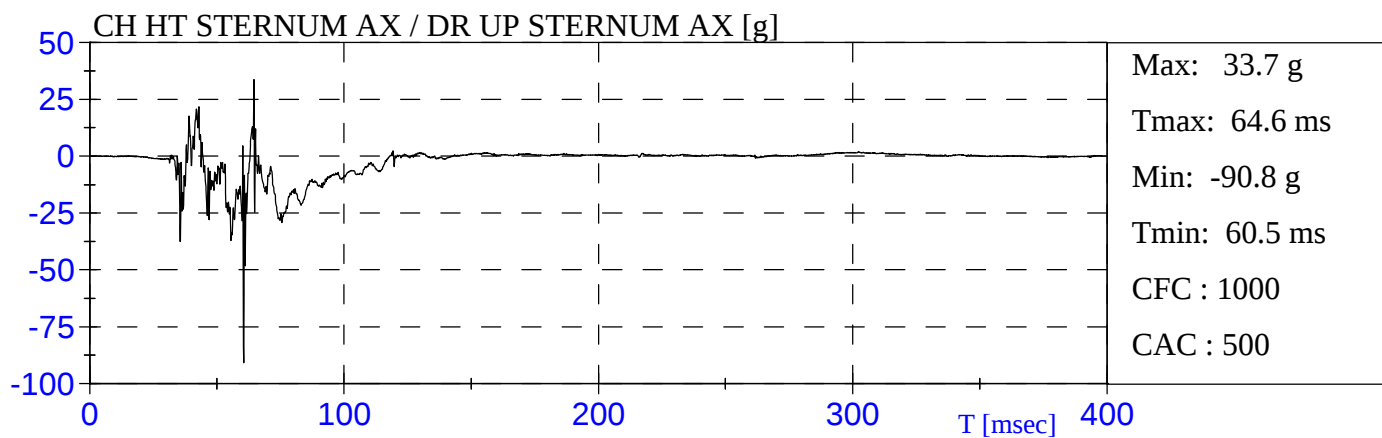
COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

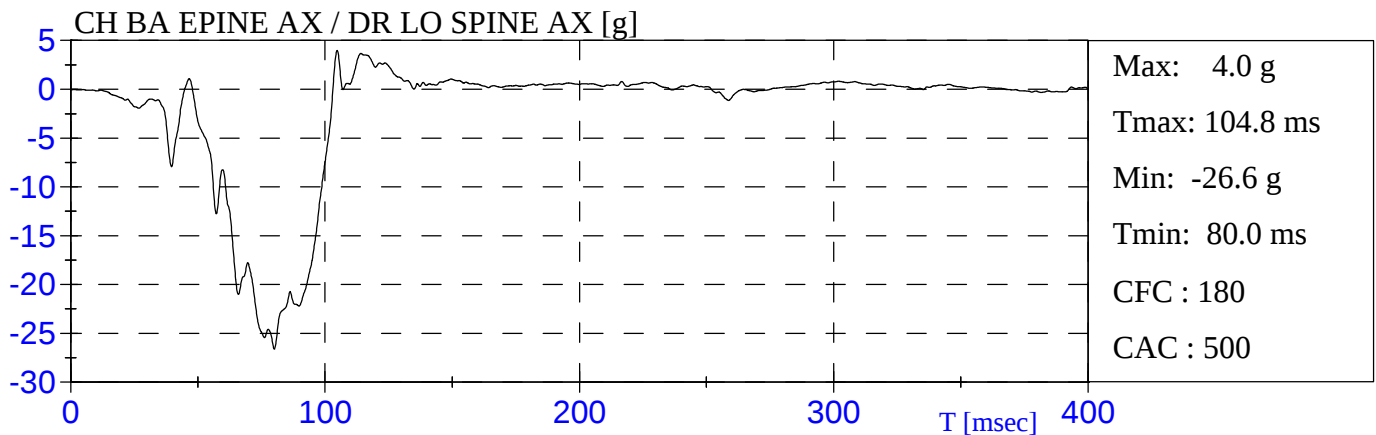
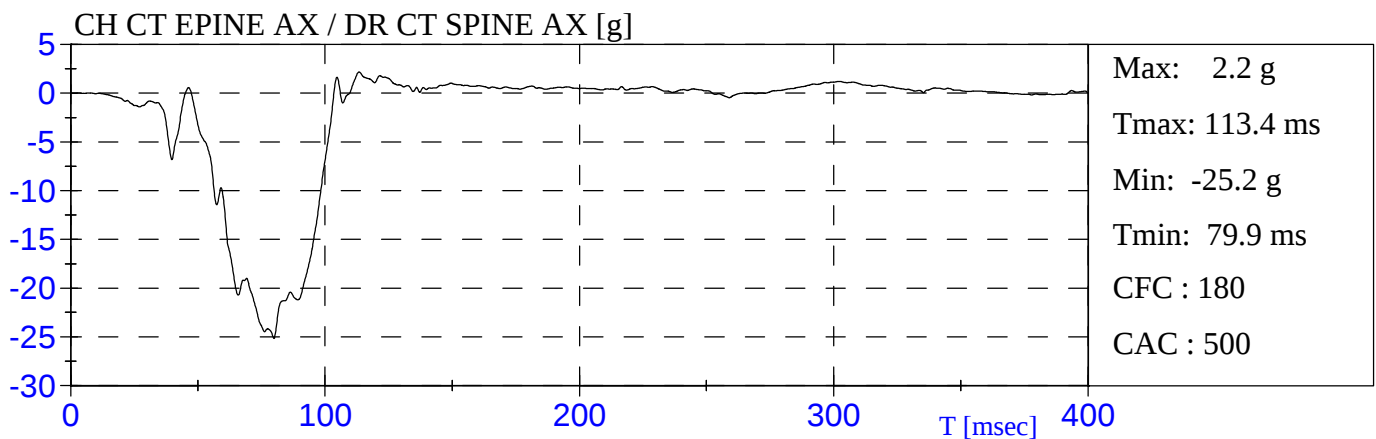
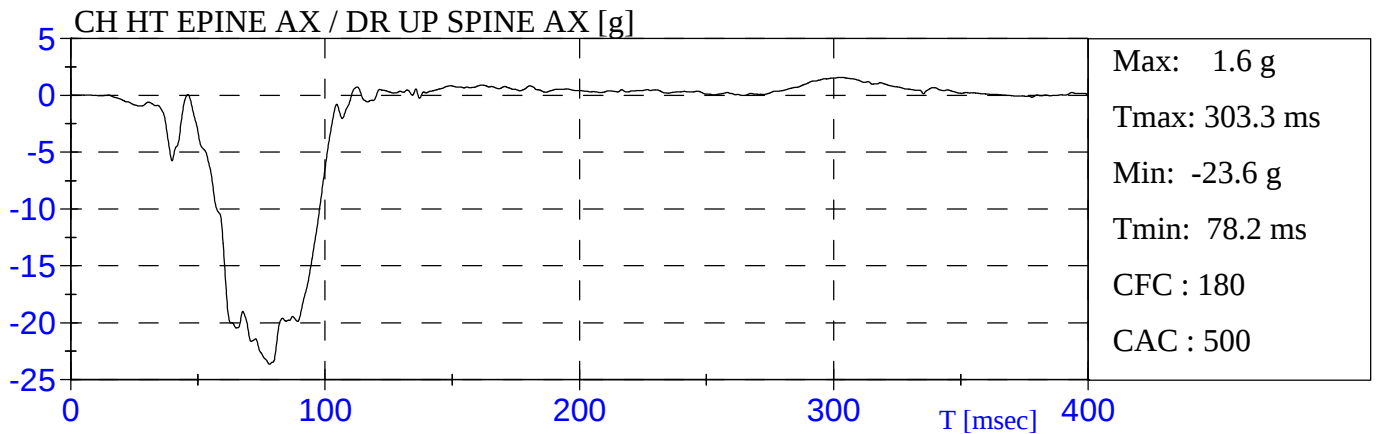
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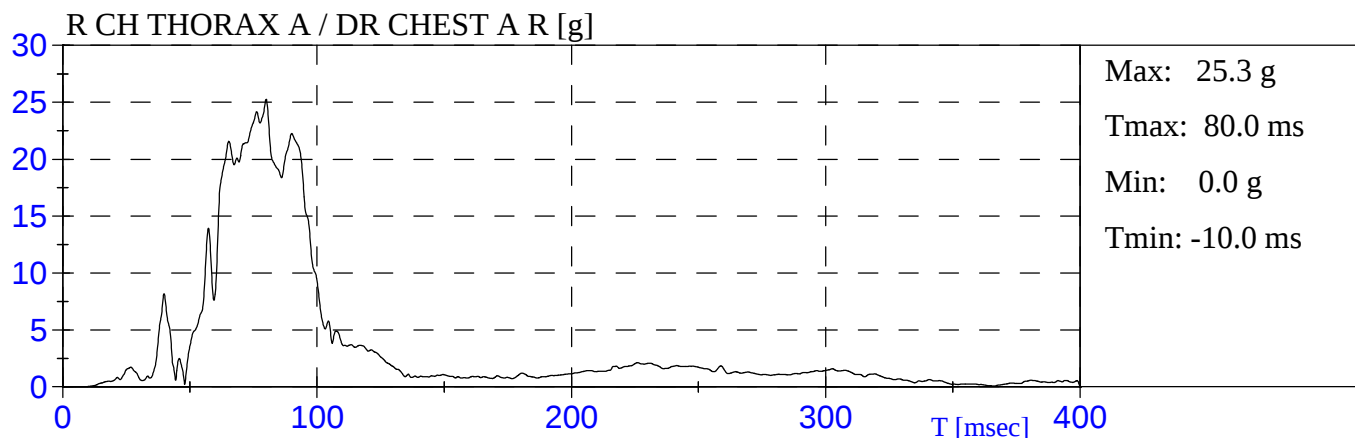
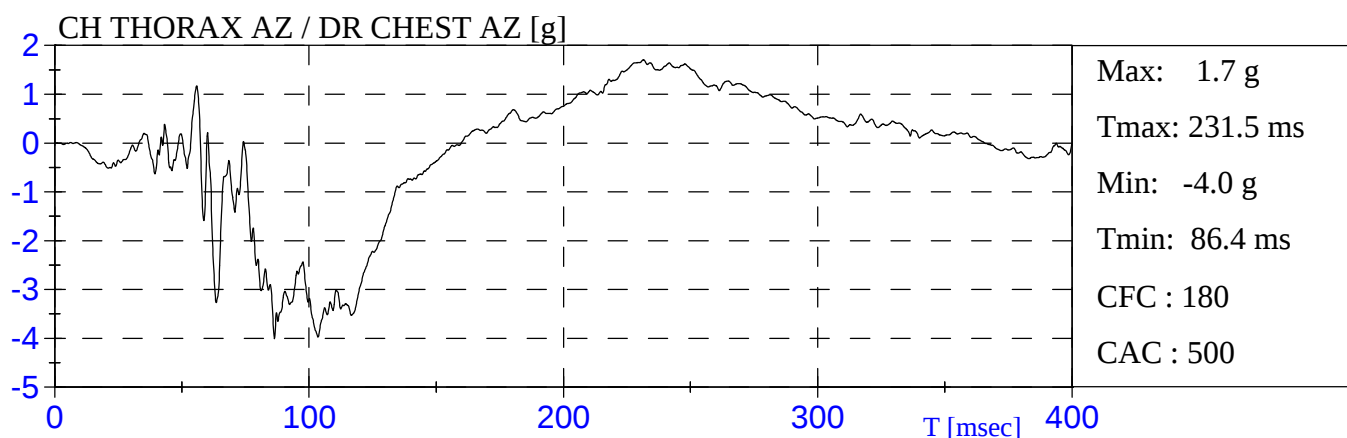
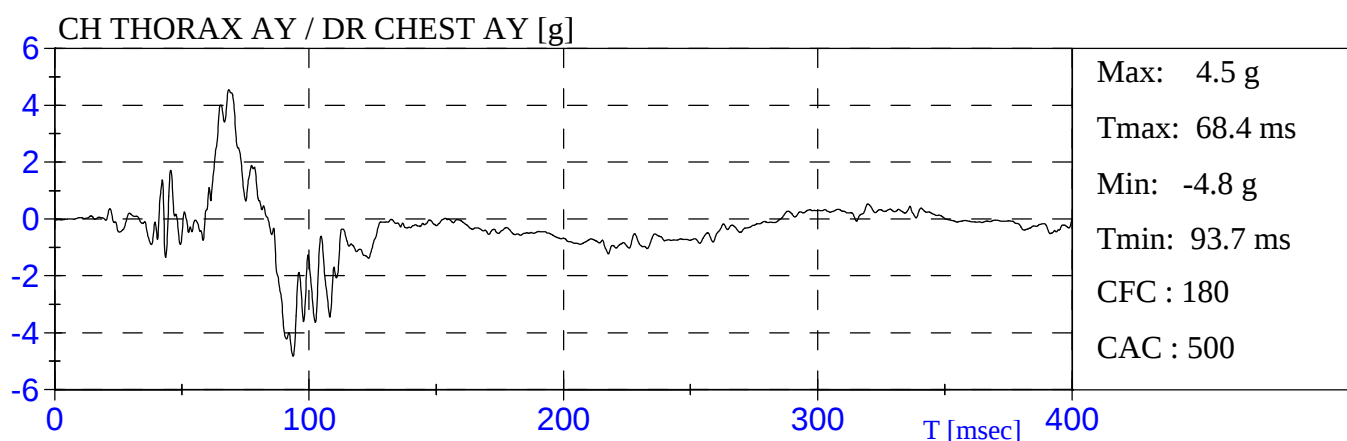
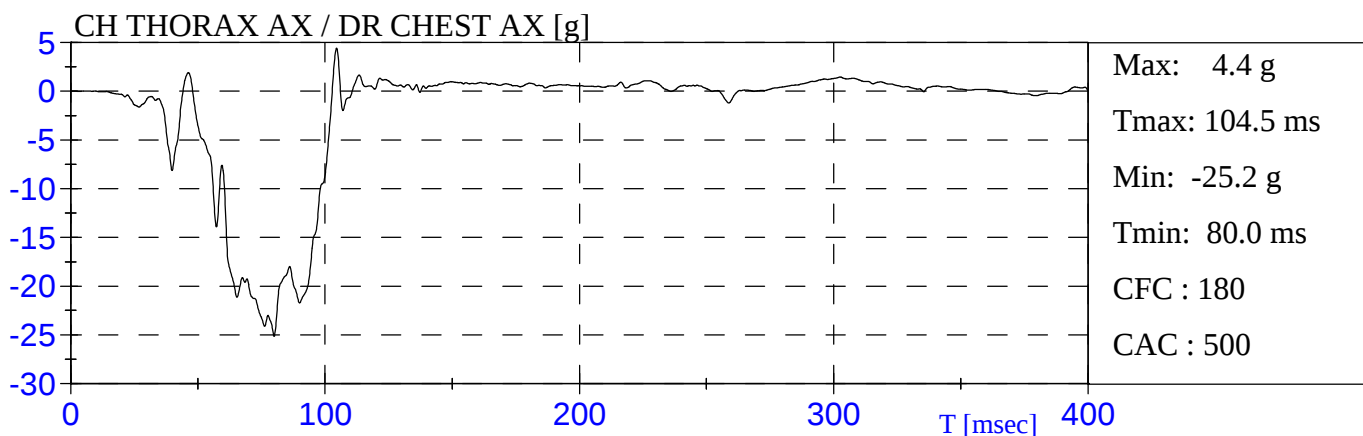
N° TC / TC No.: TC03-233









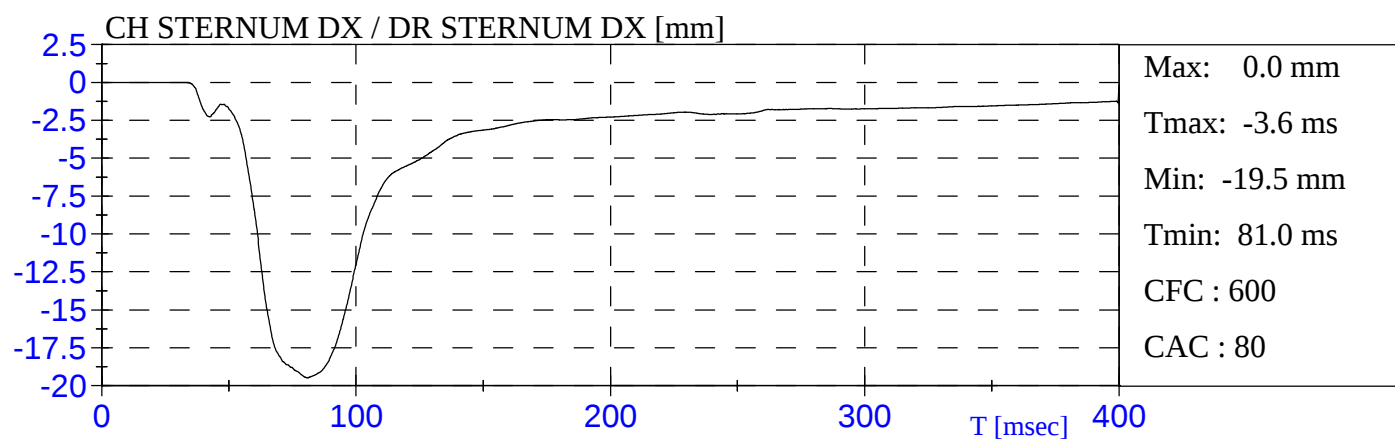


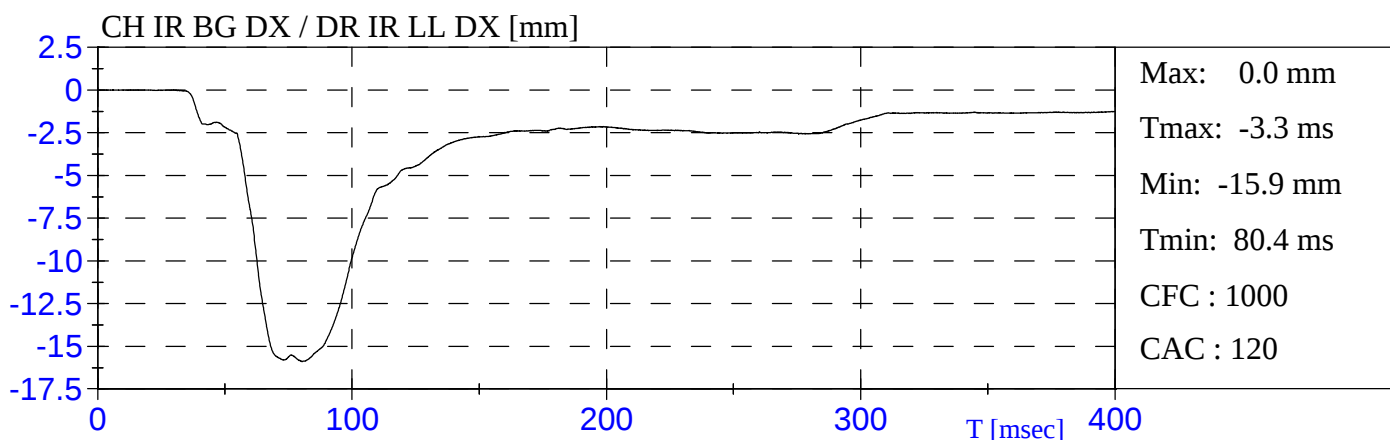
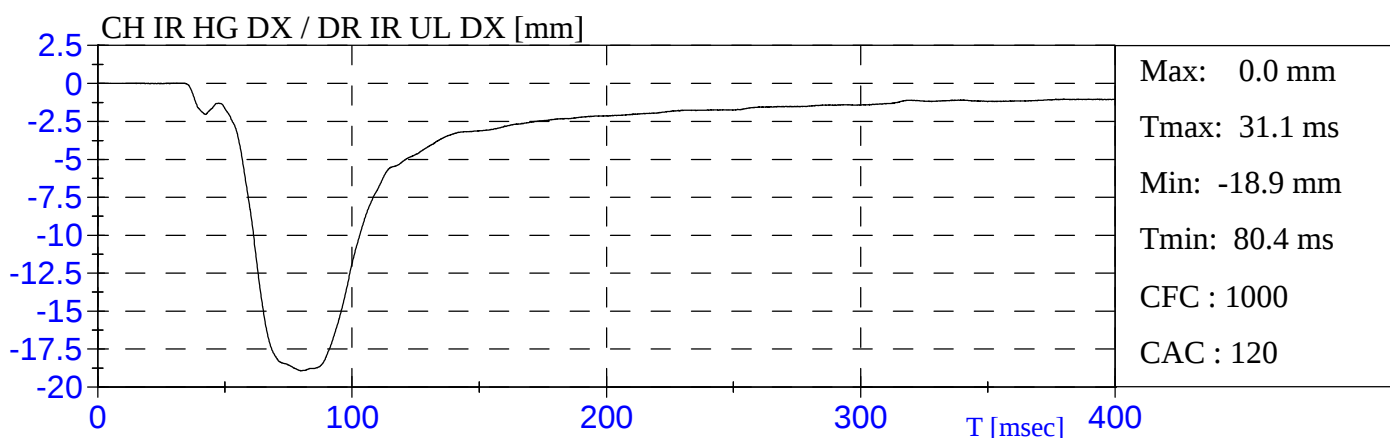
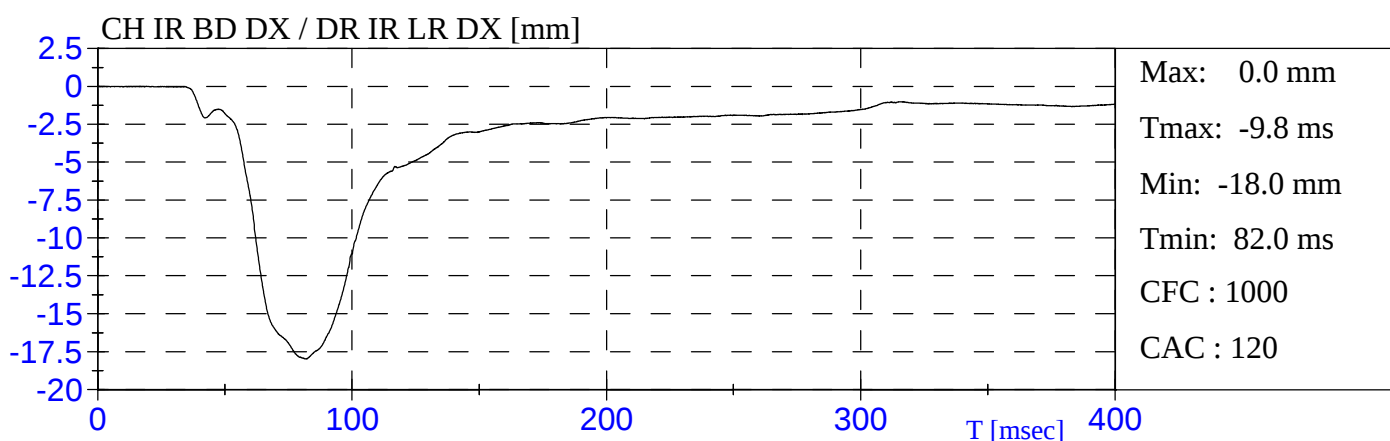
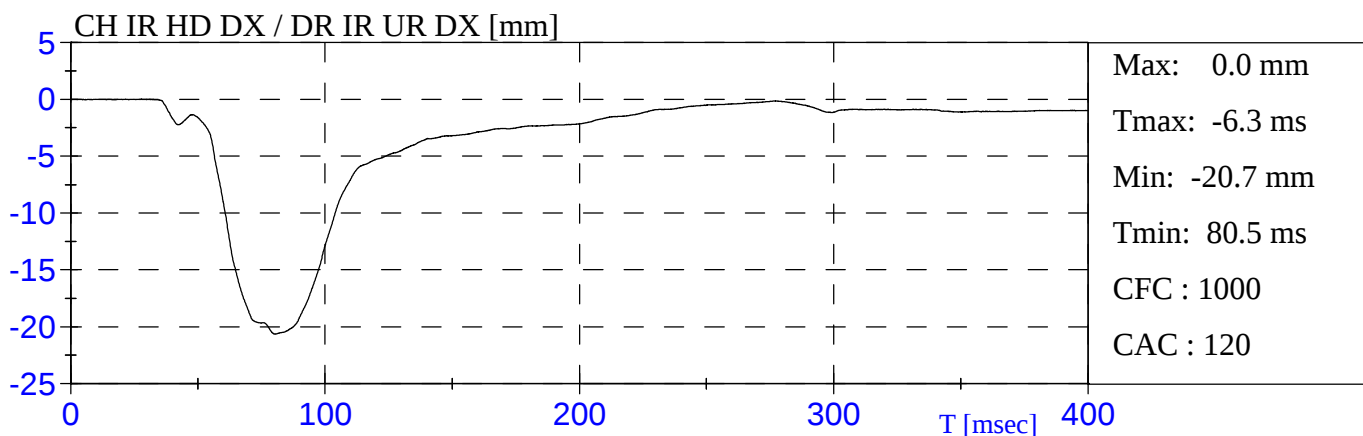


COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05

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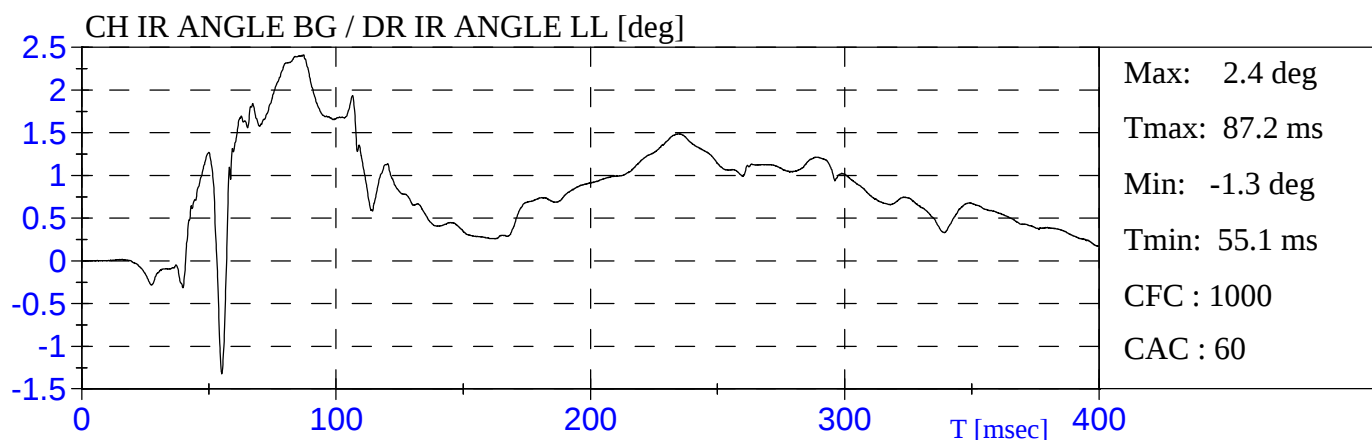
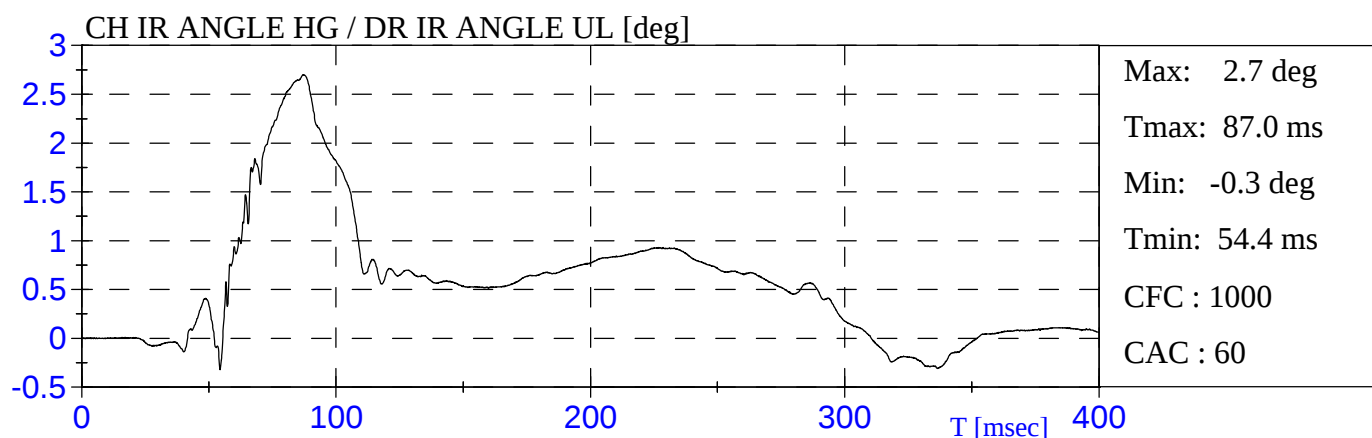
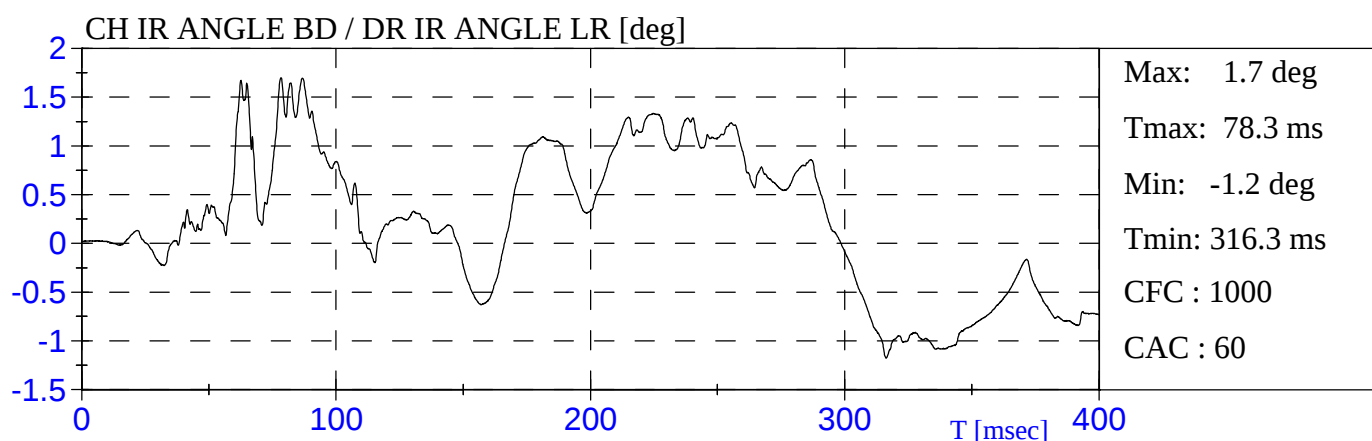
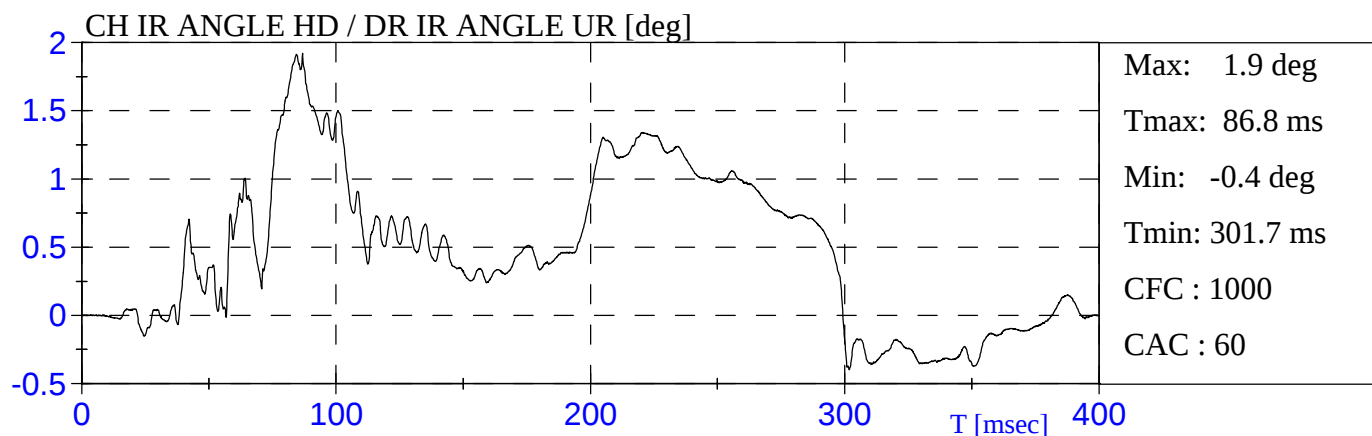


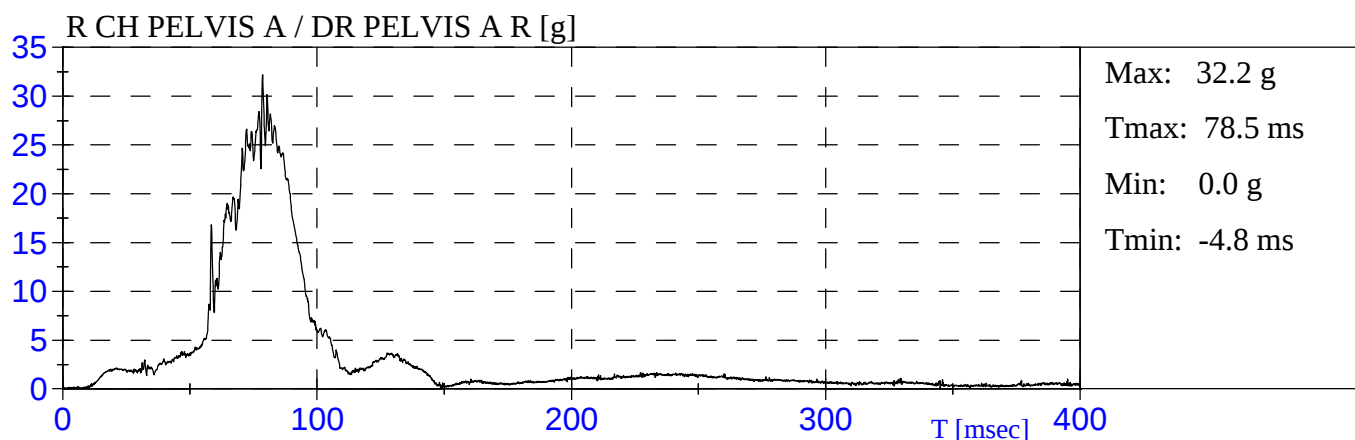
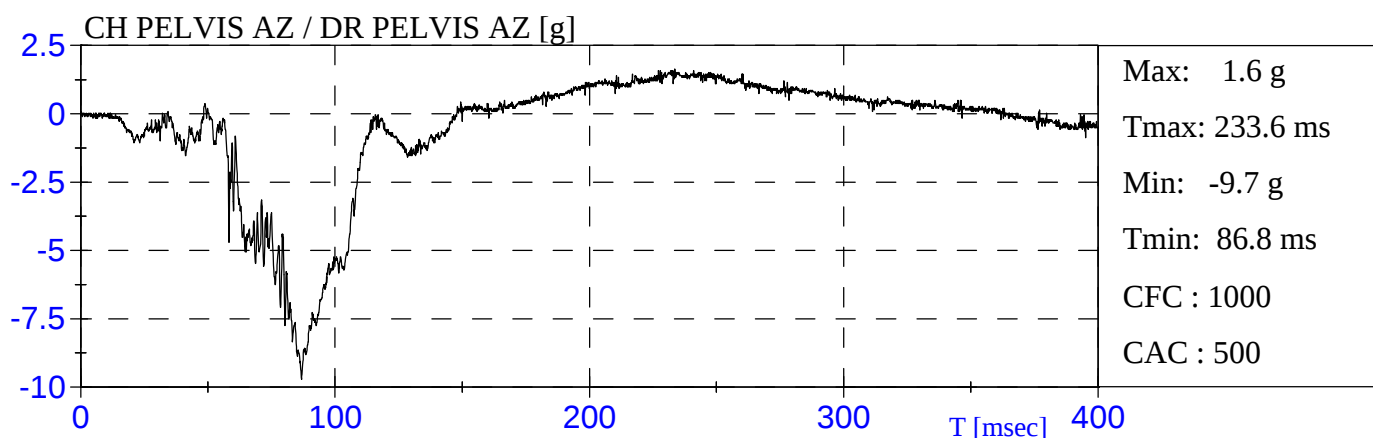
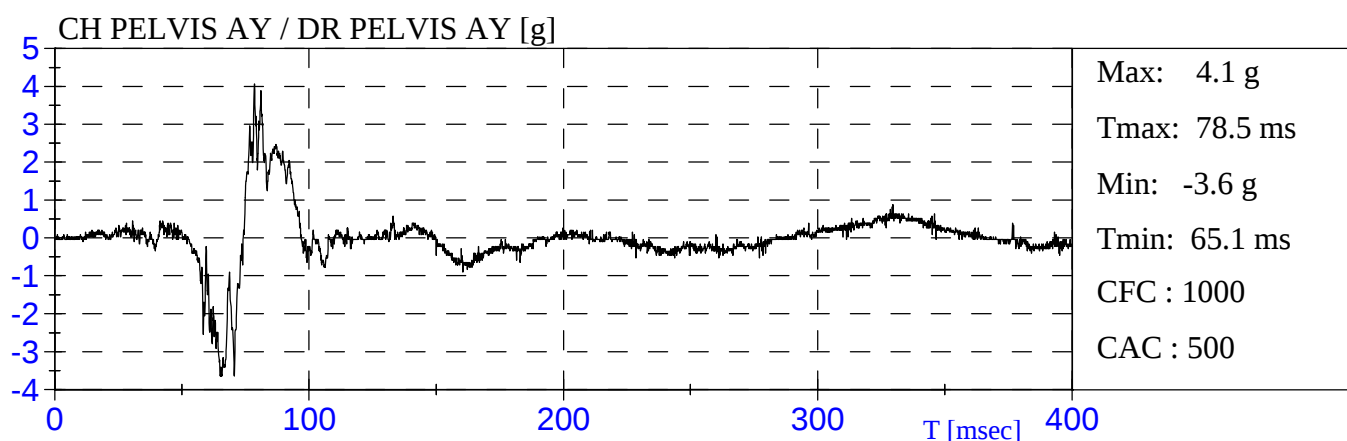
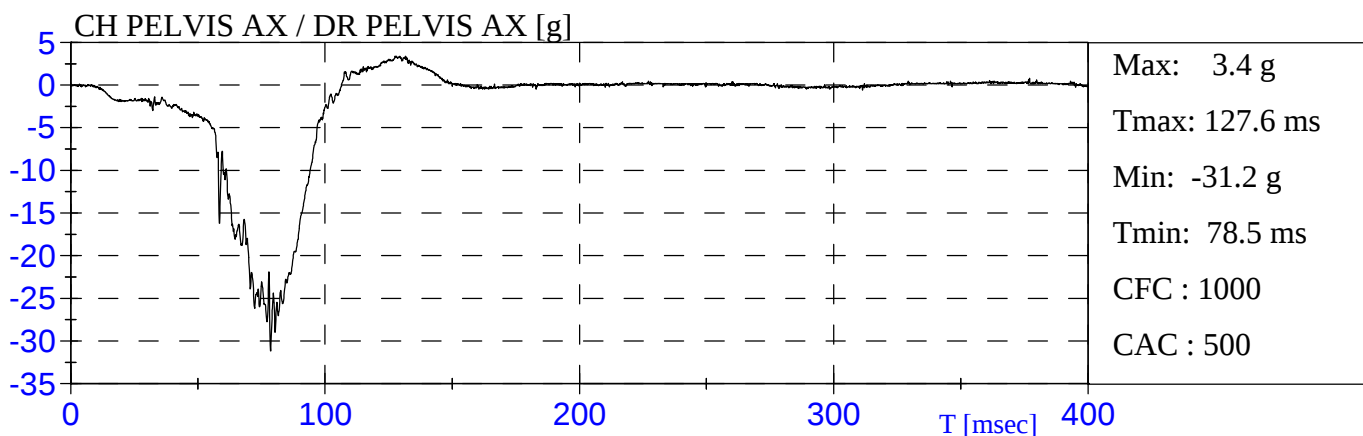


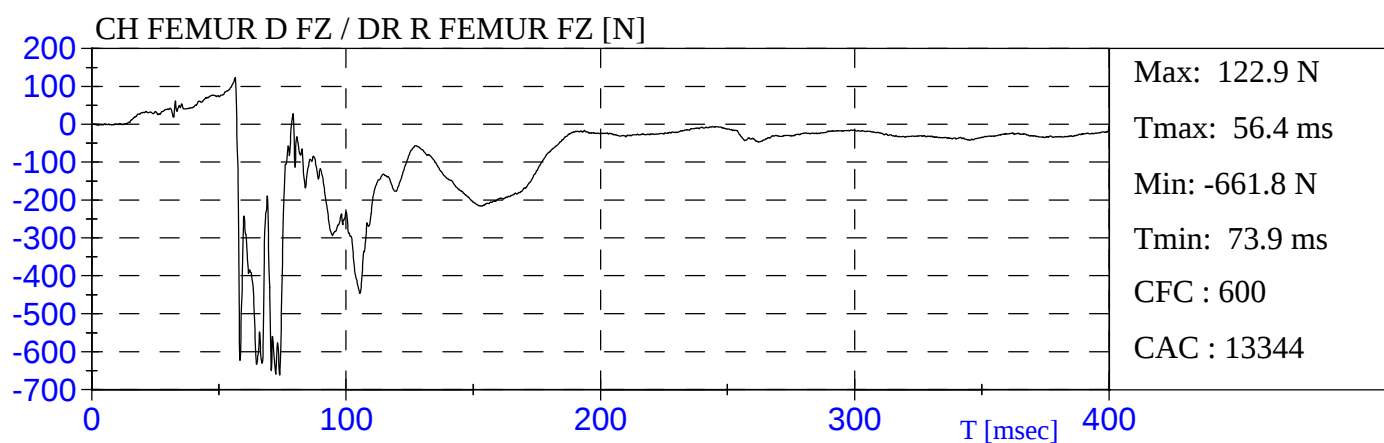
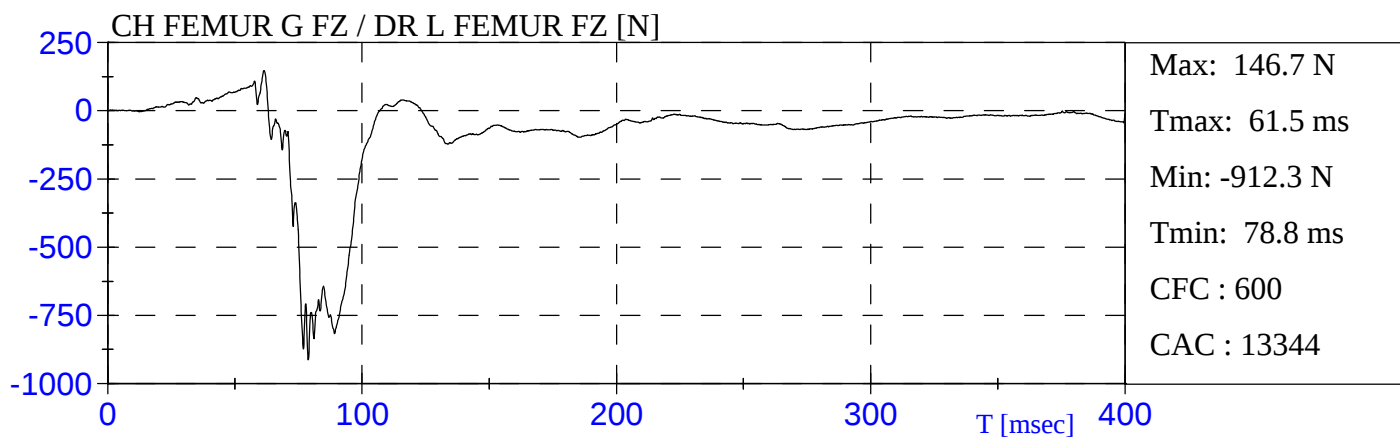
COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

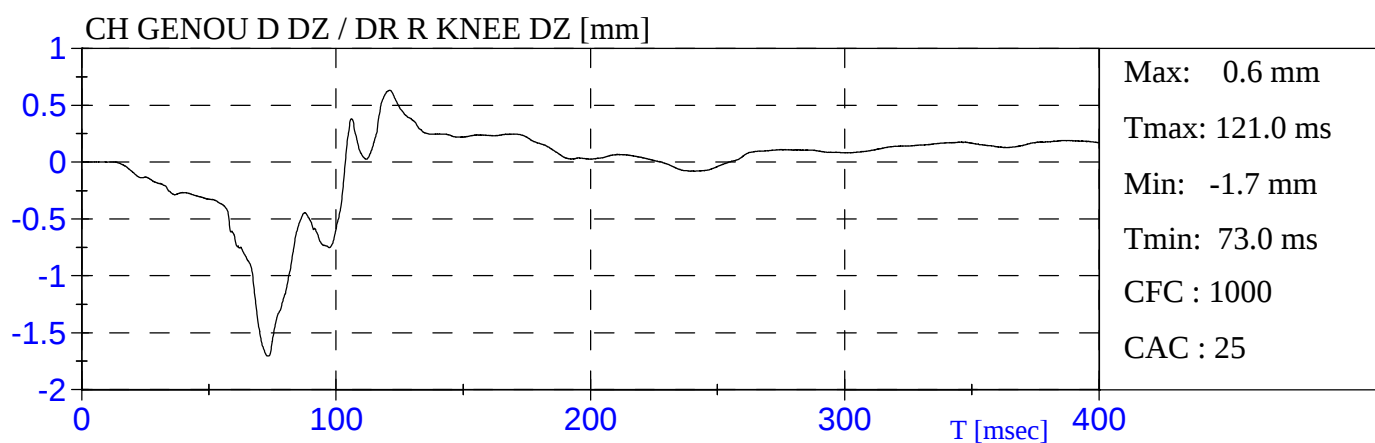
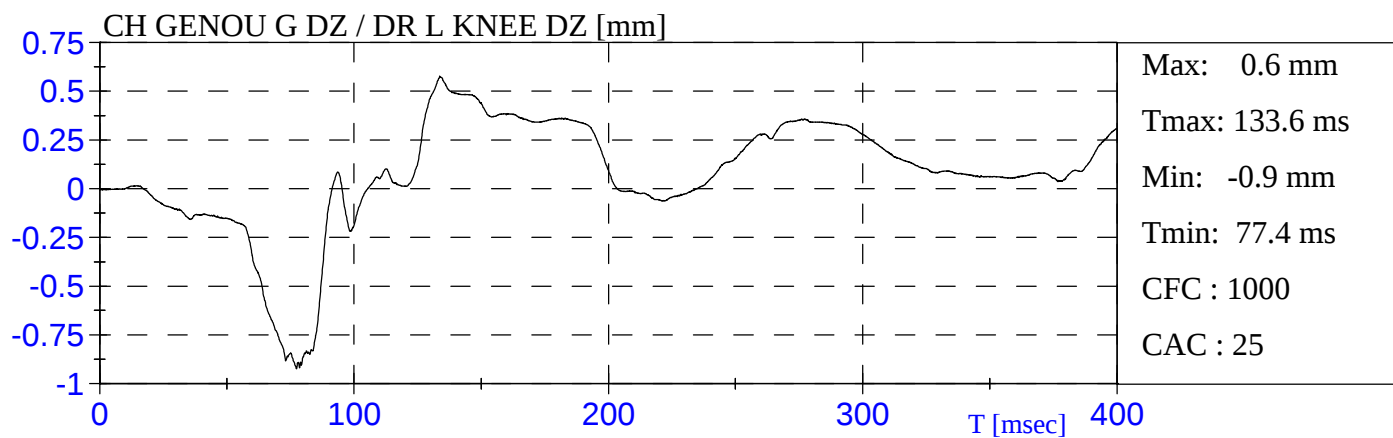
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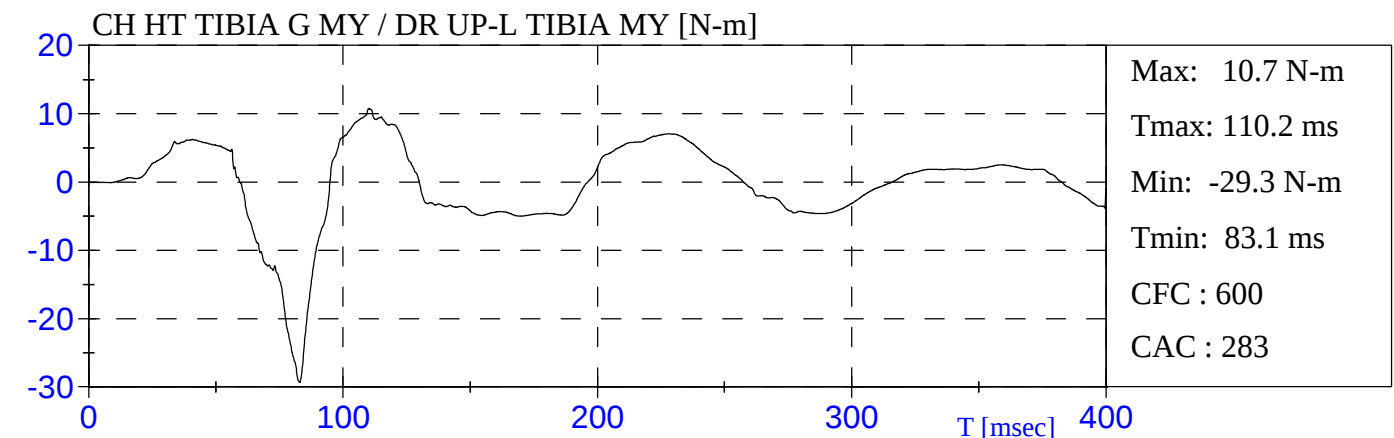
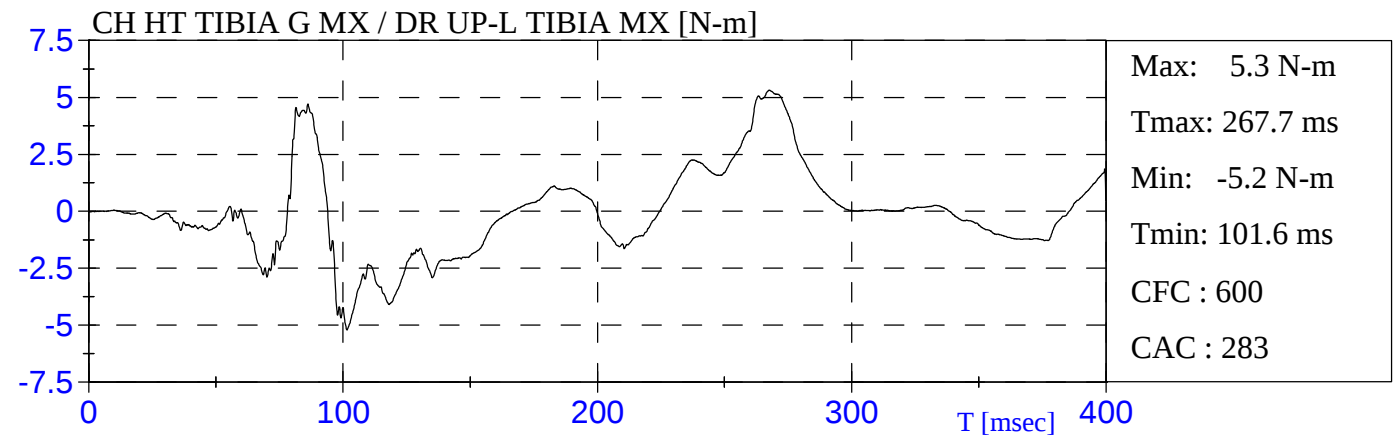
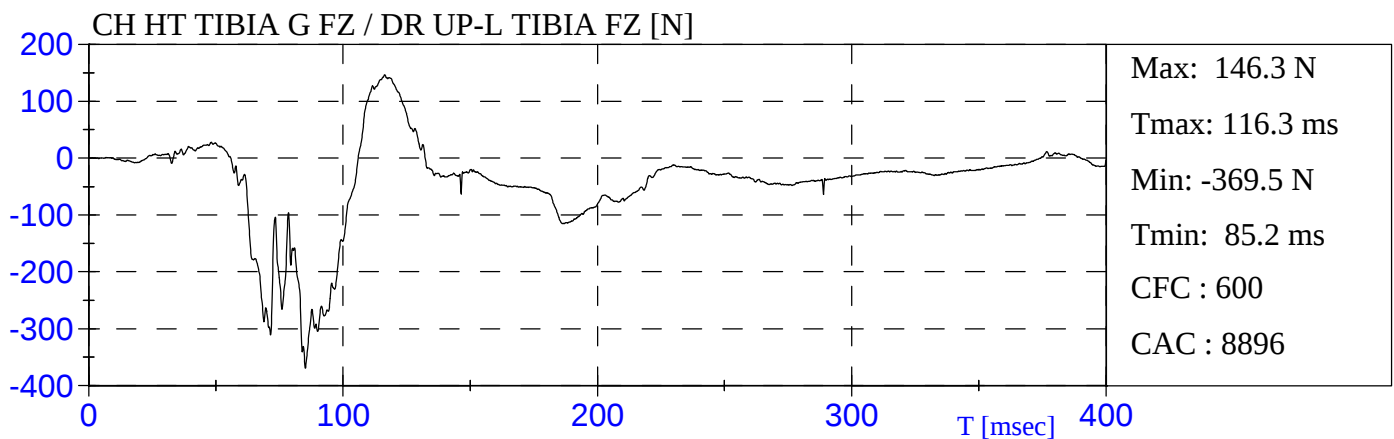
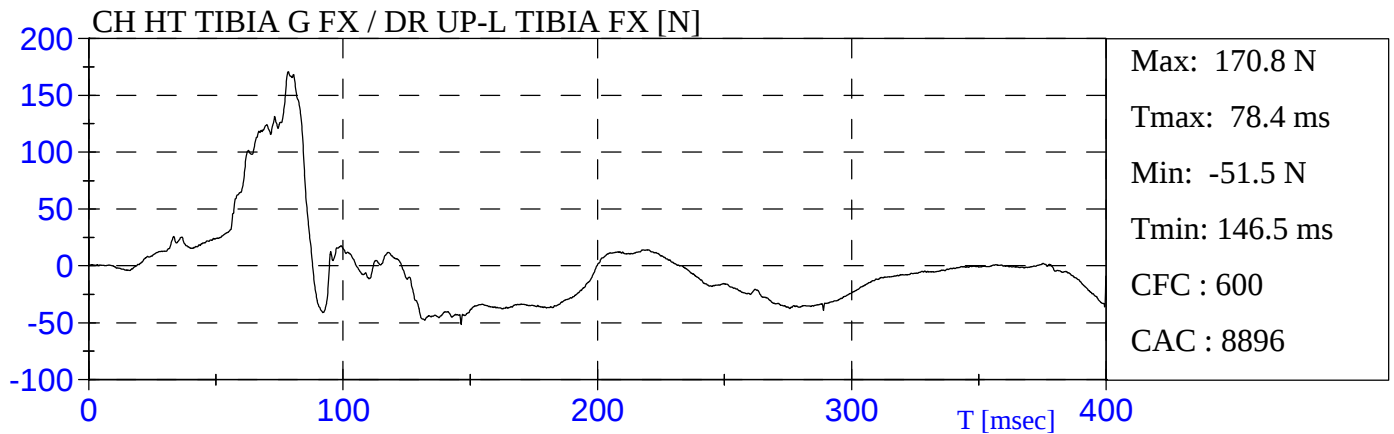
N° TC / TC No.: TC03-233

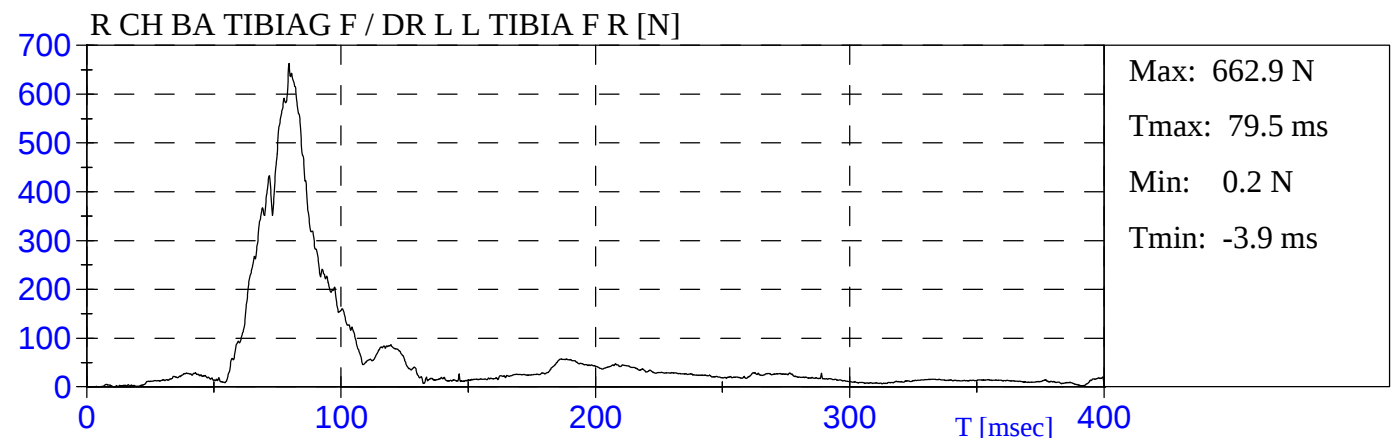
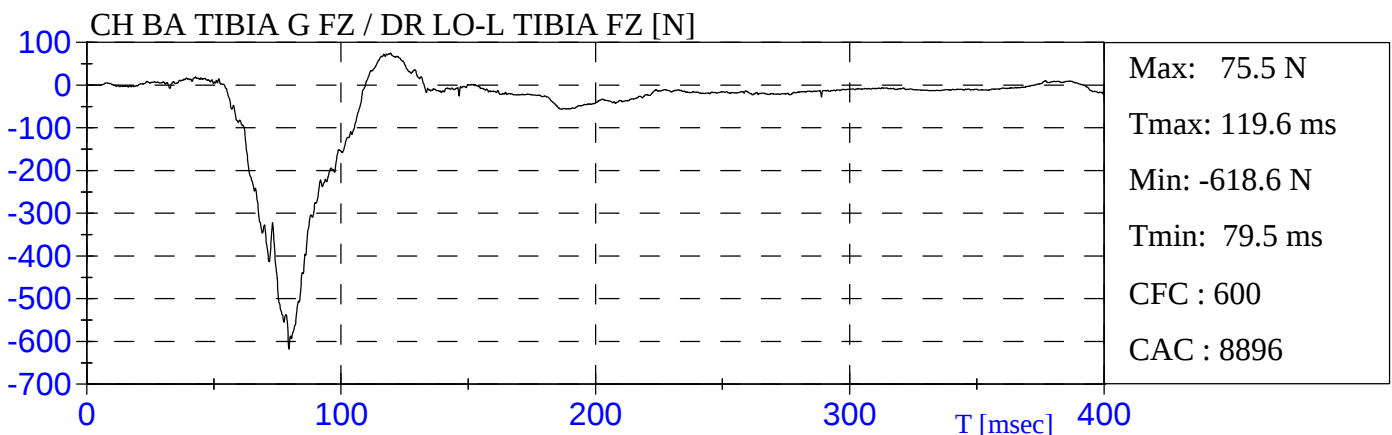
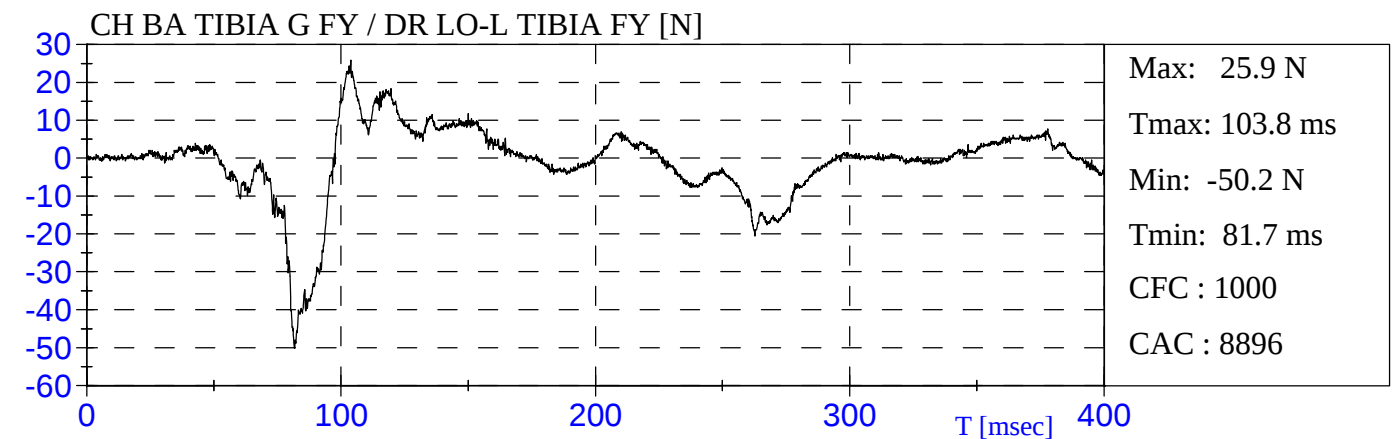
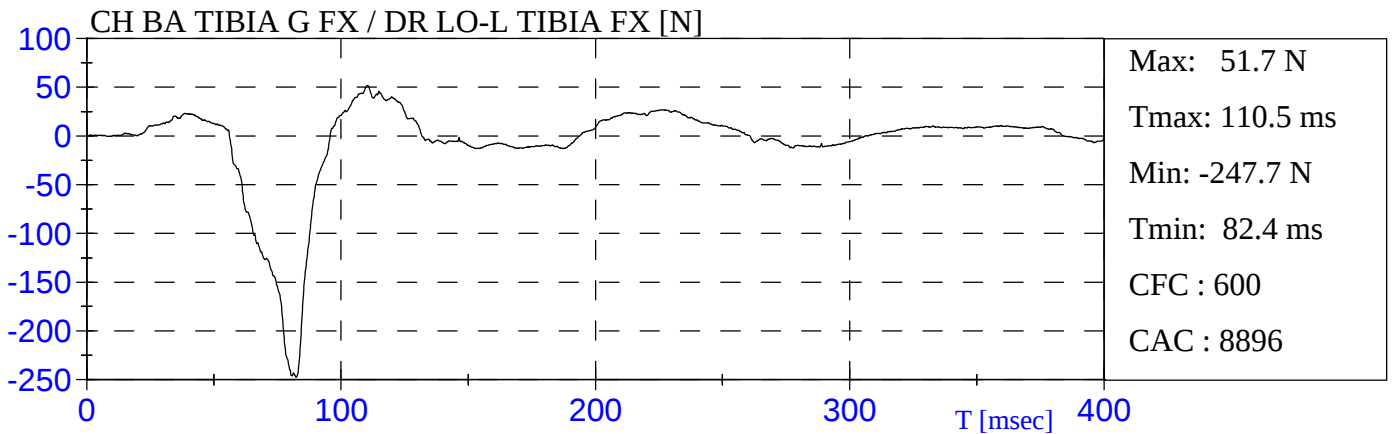


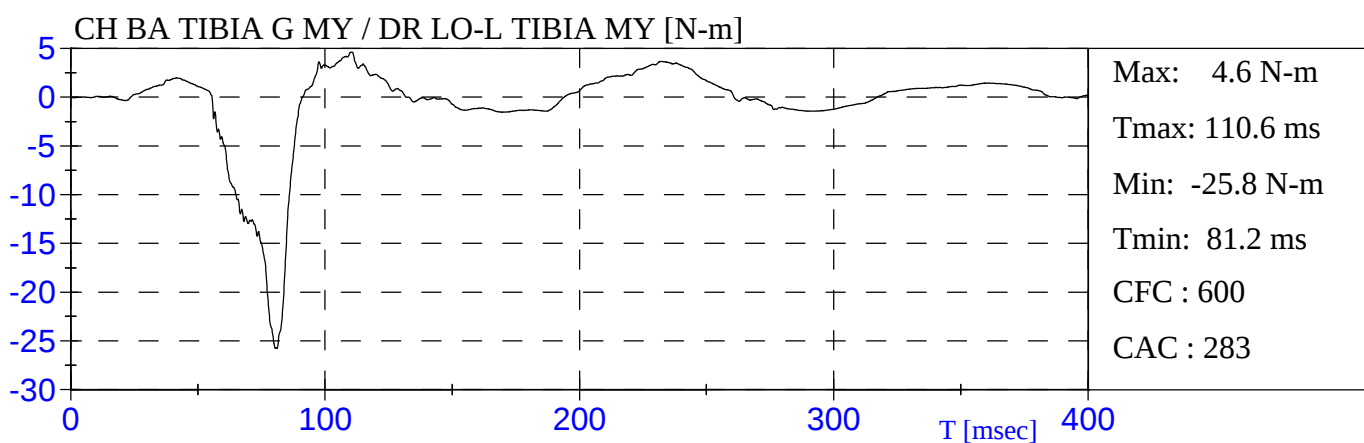
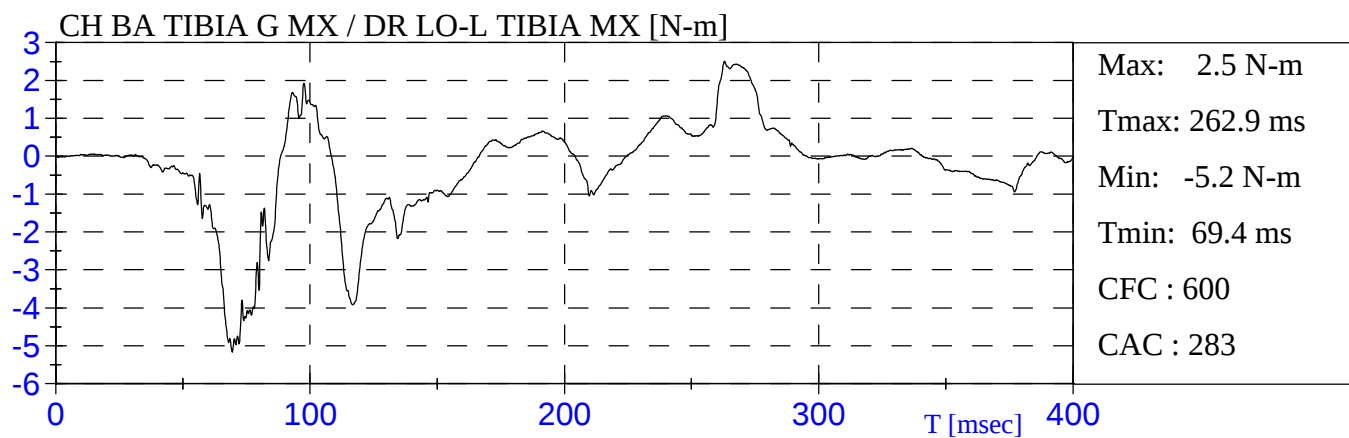


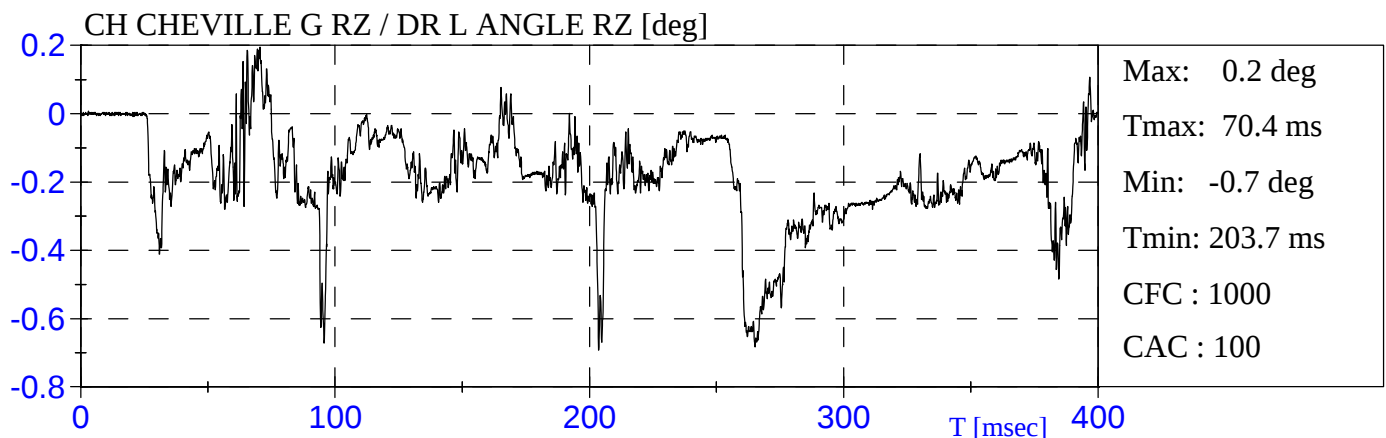
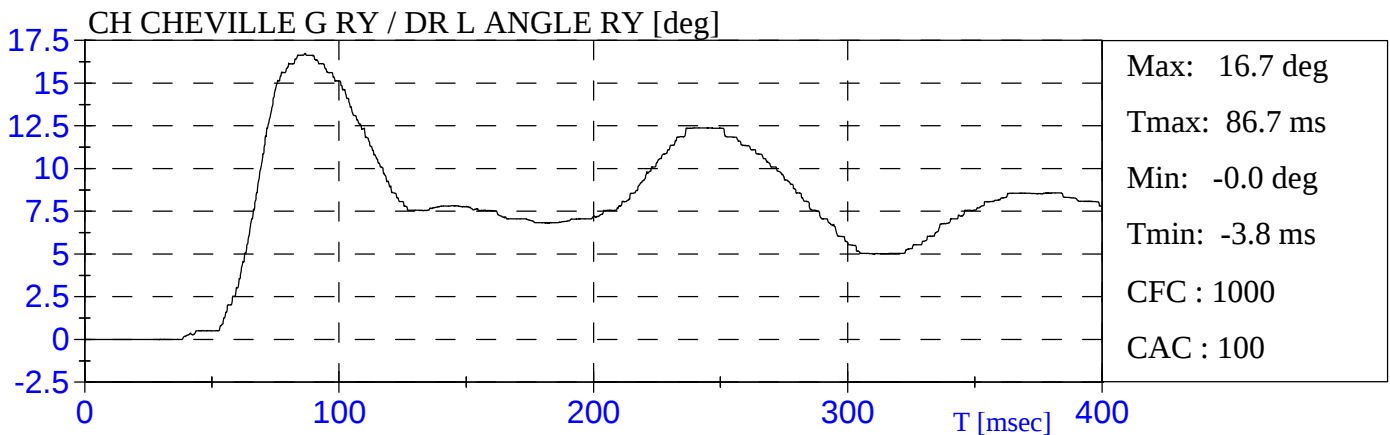
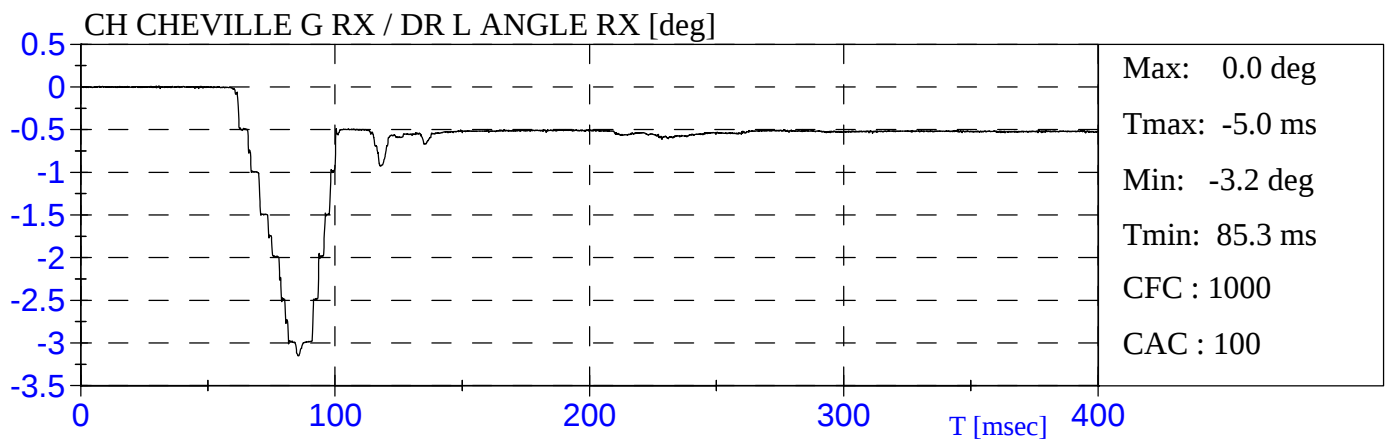
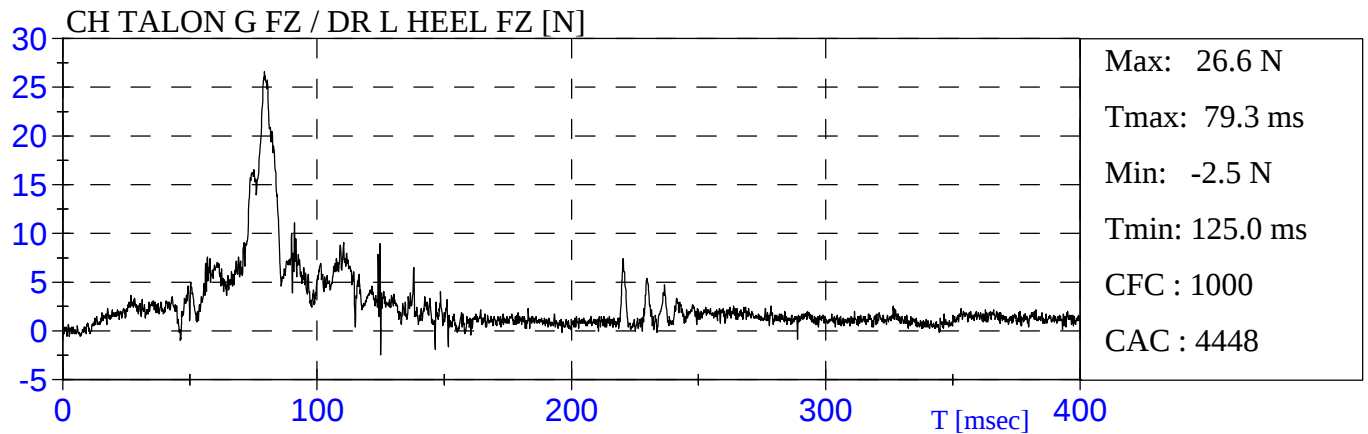


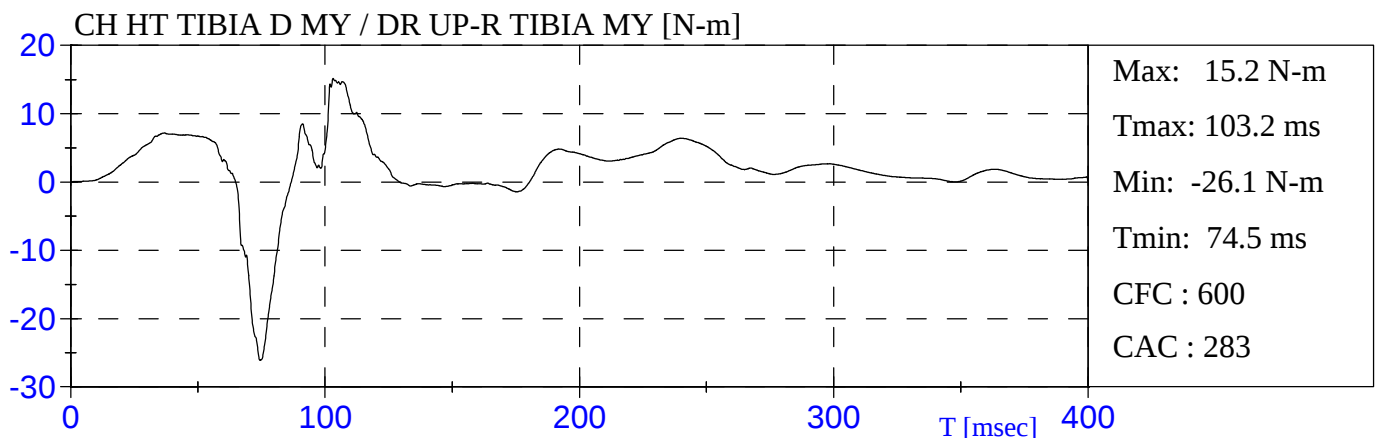
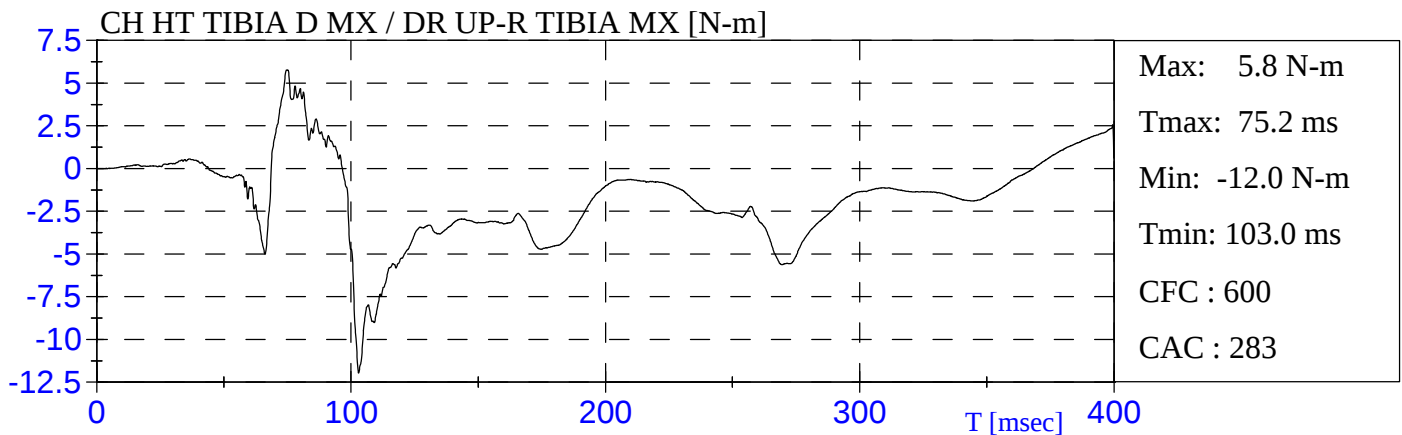
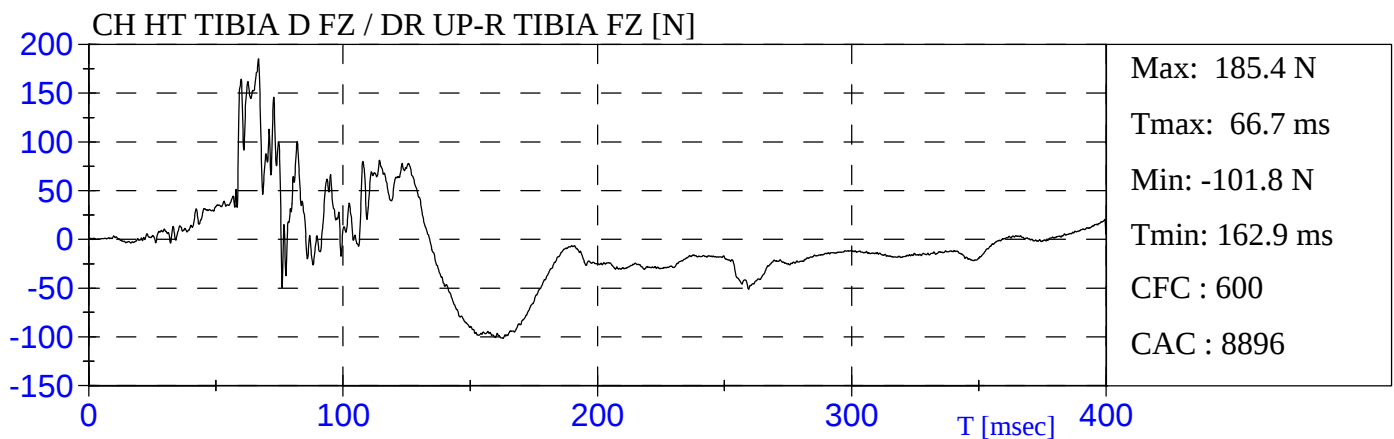
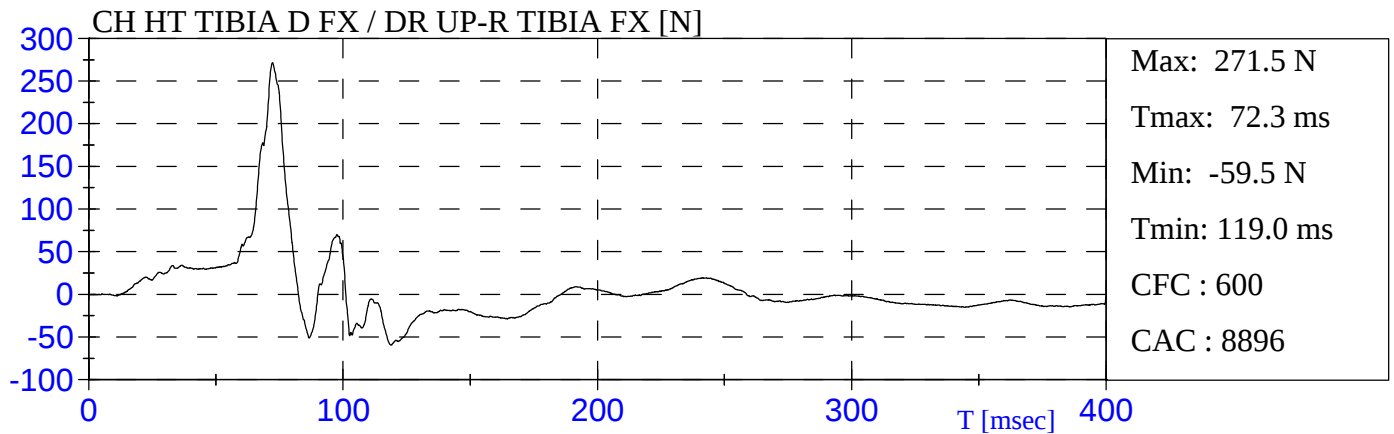


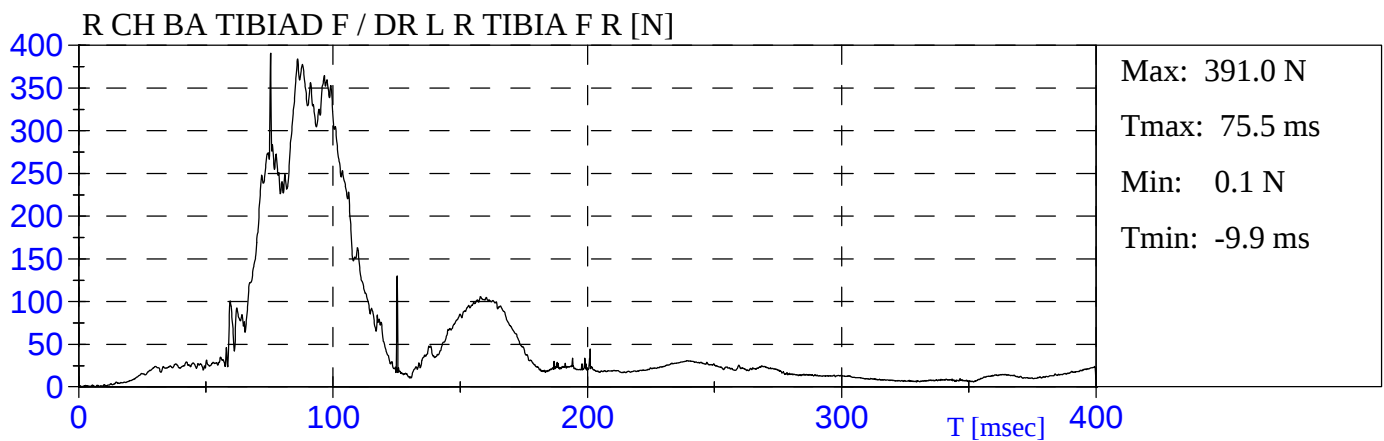
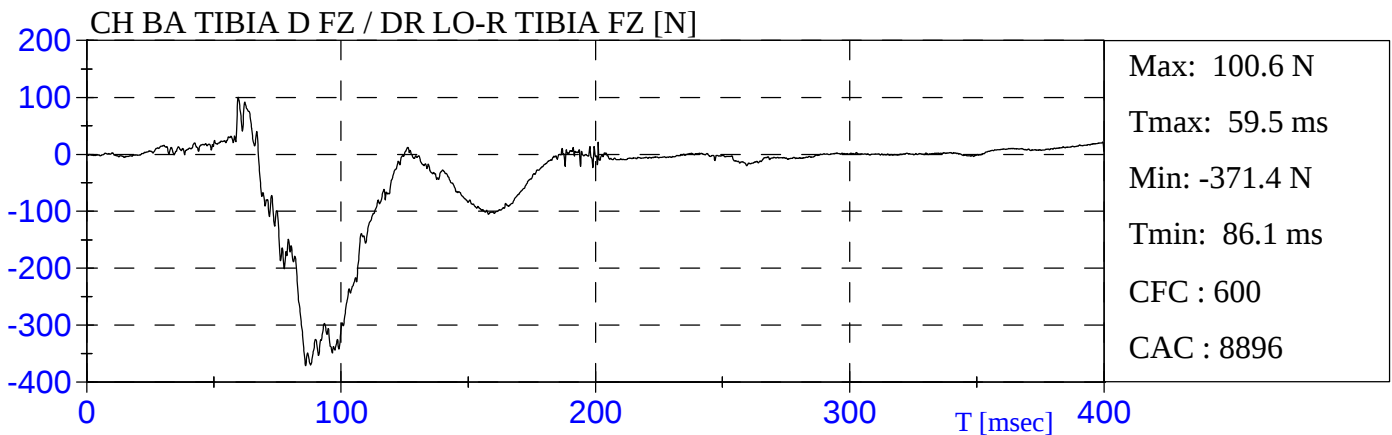
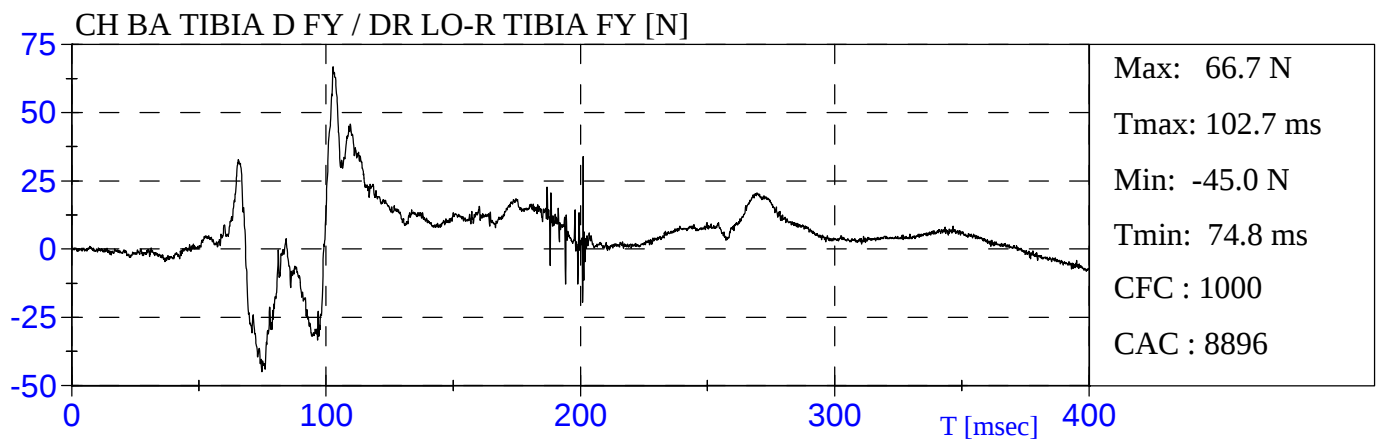
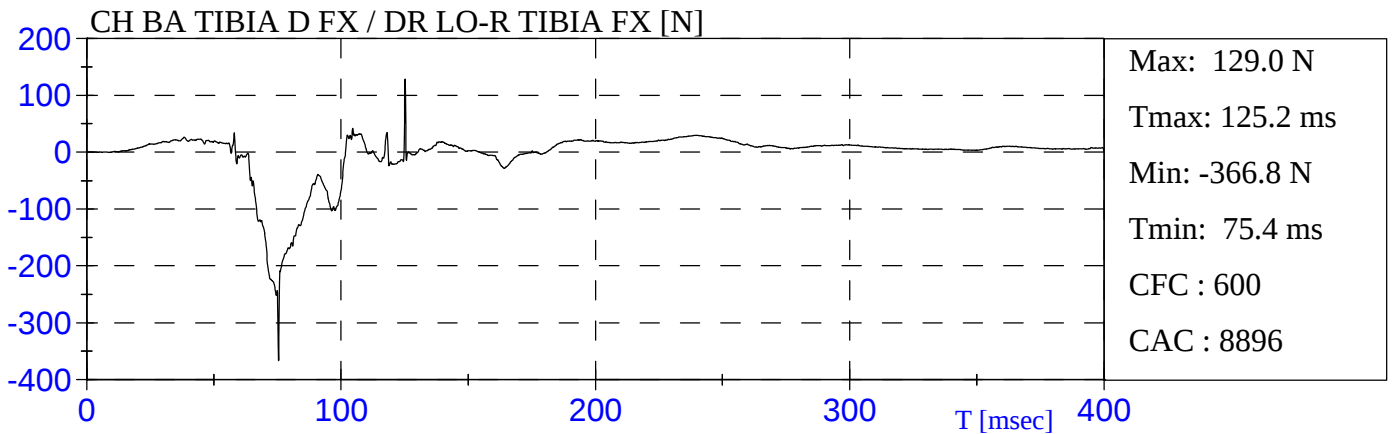


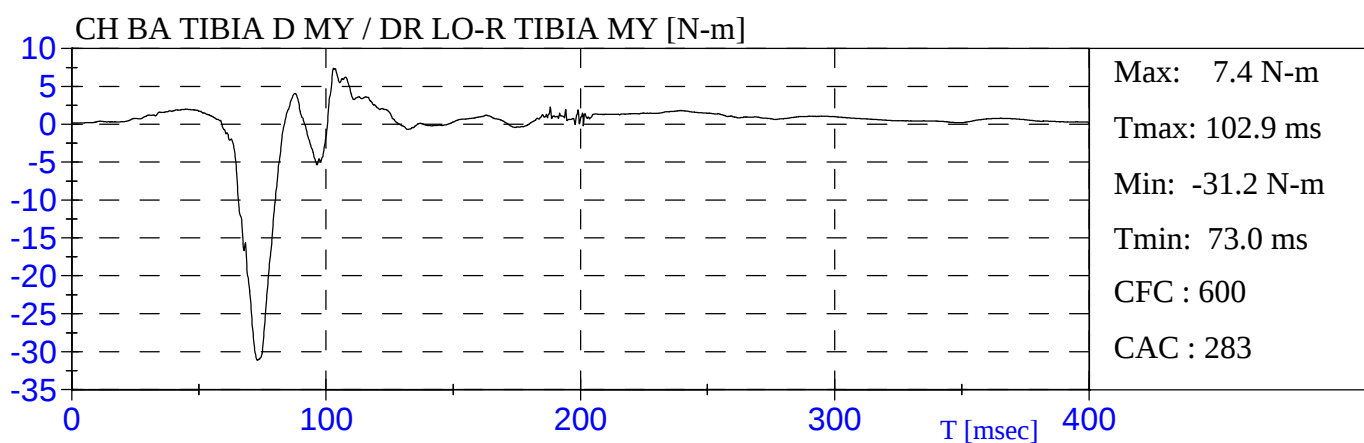
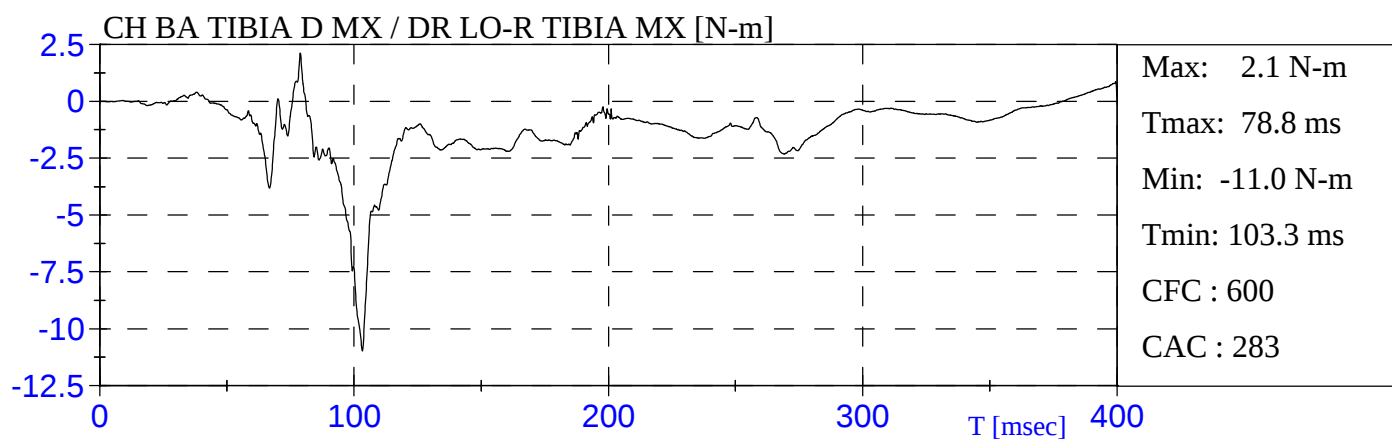


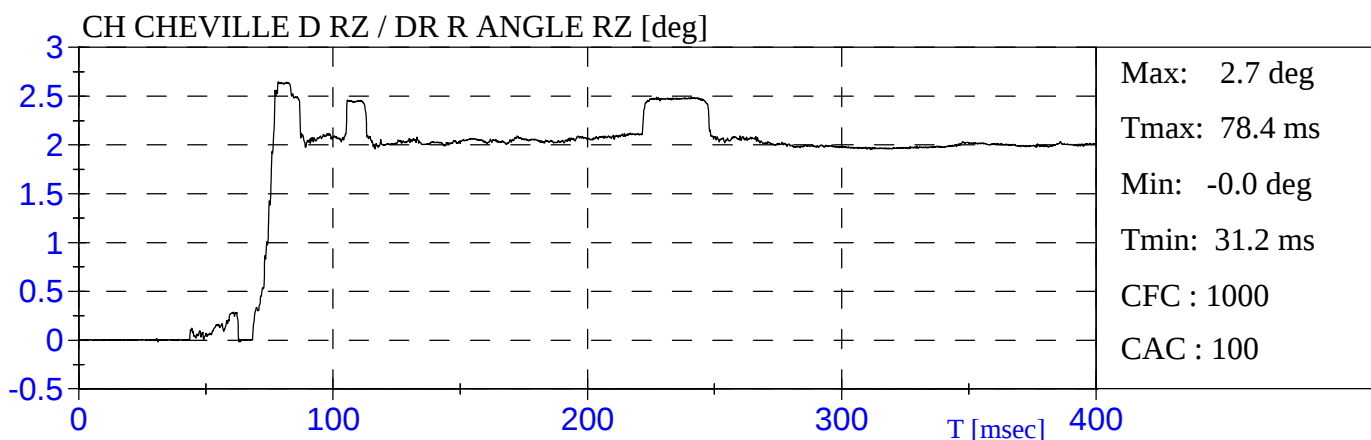
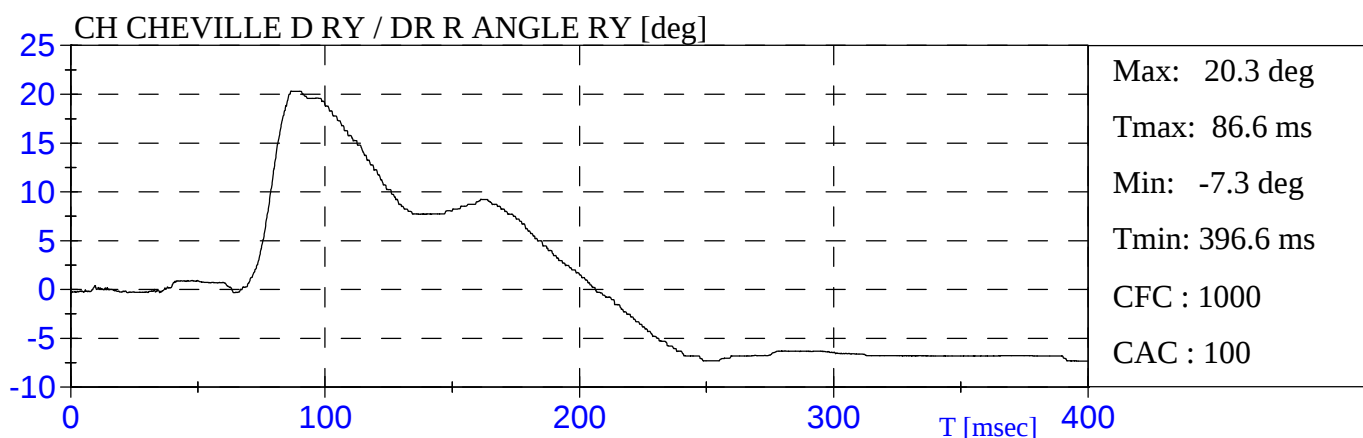
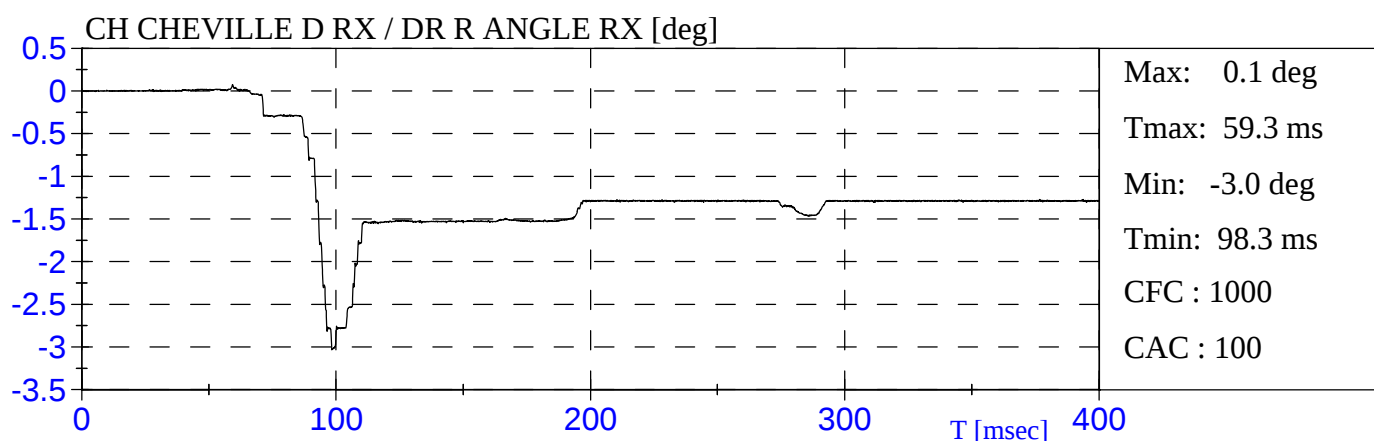
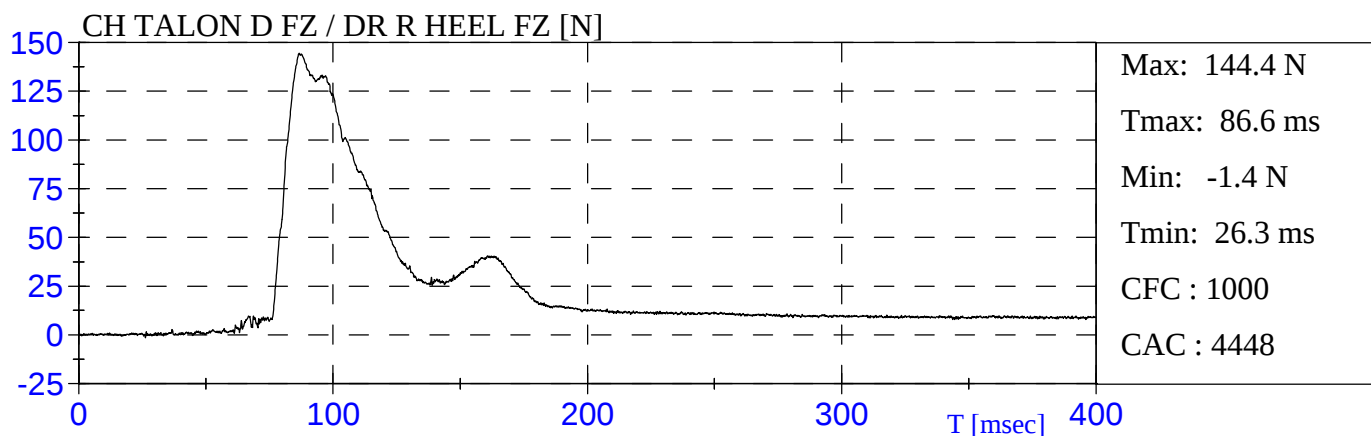








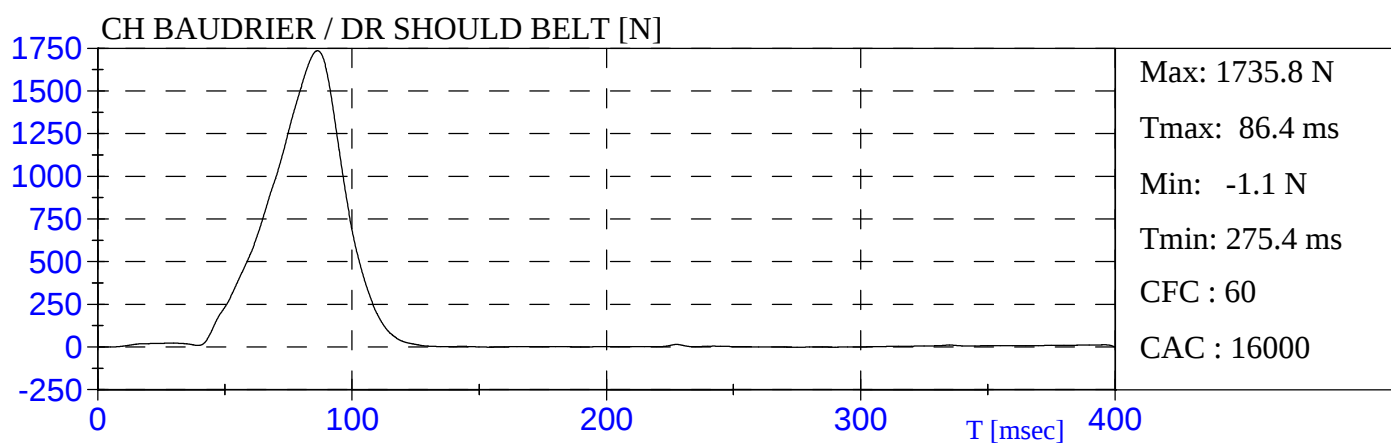
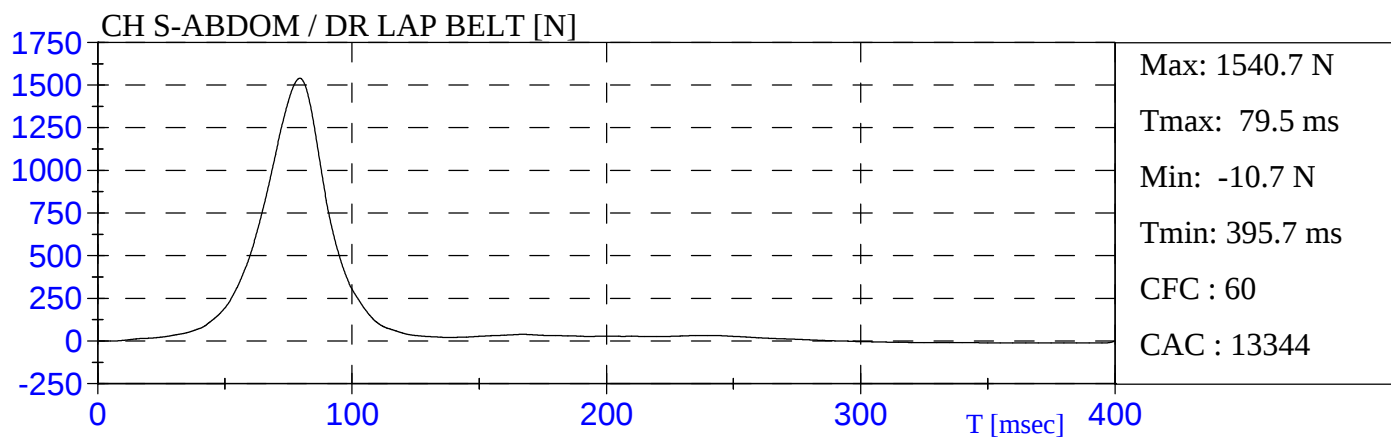


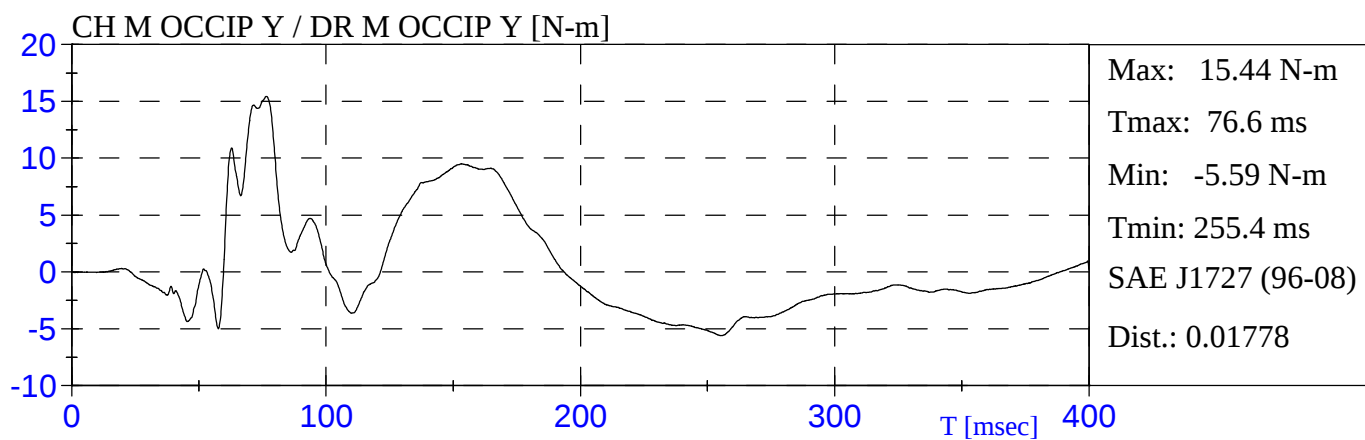


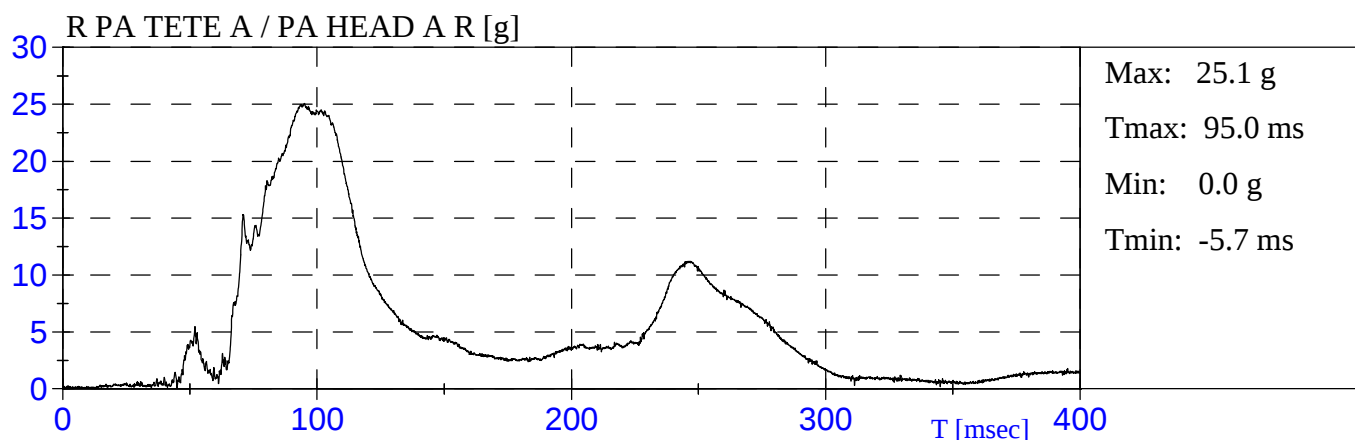
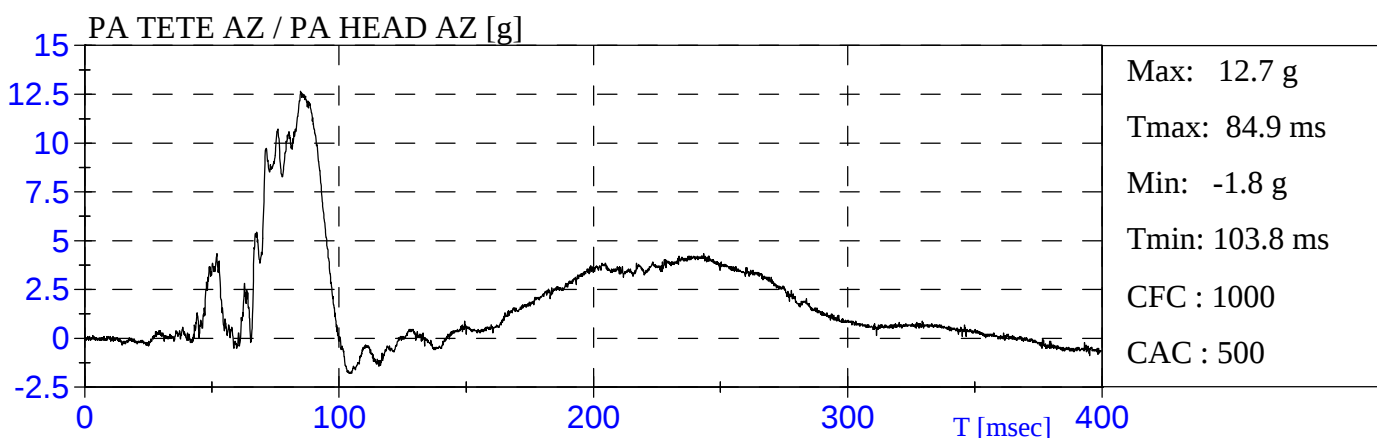
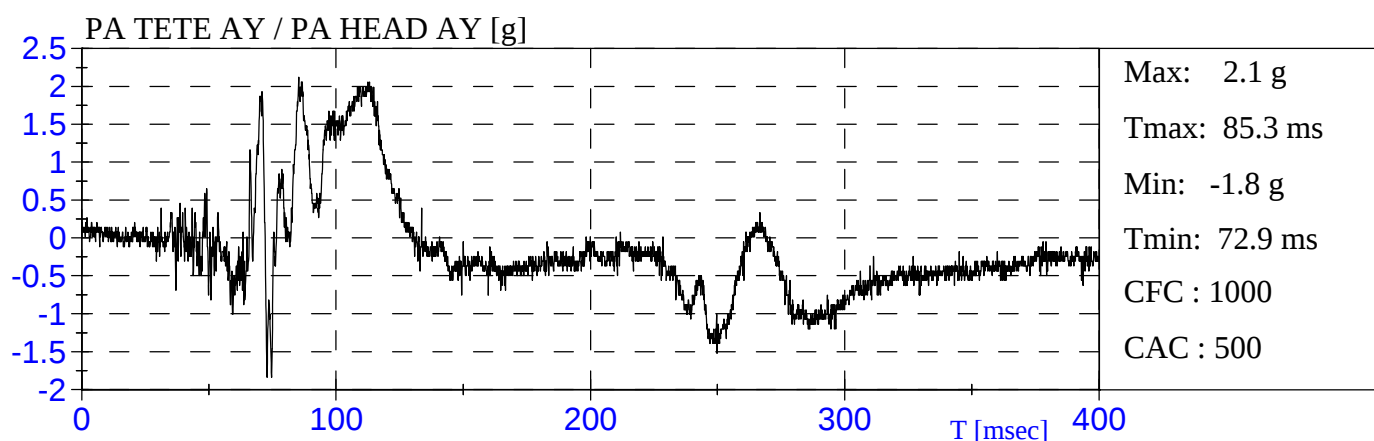
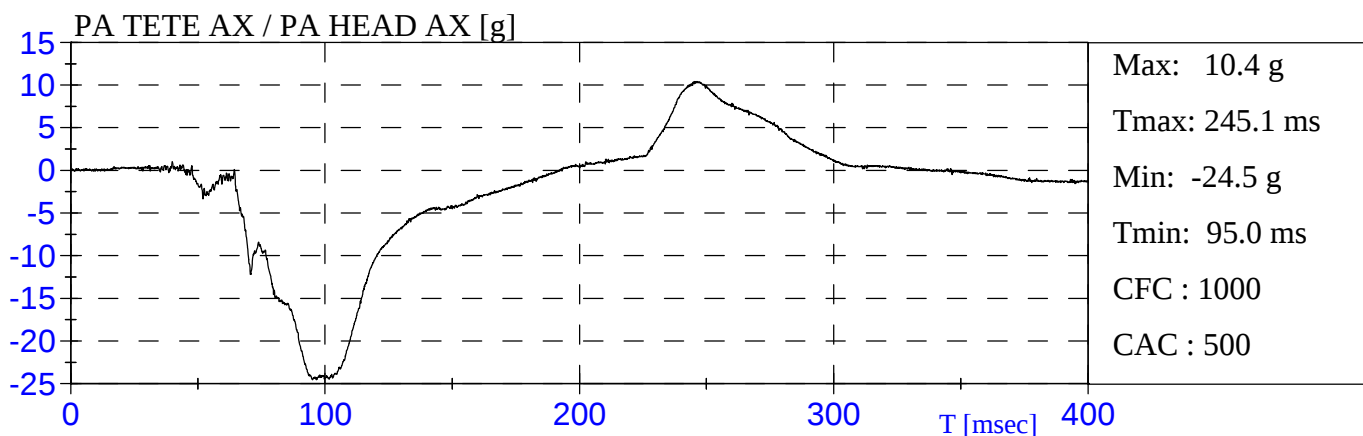


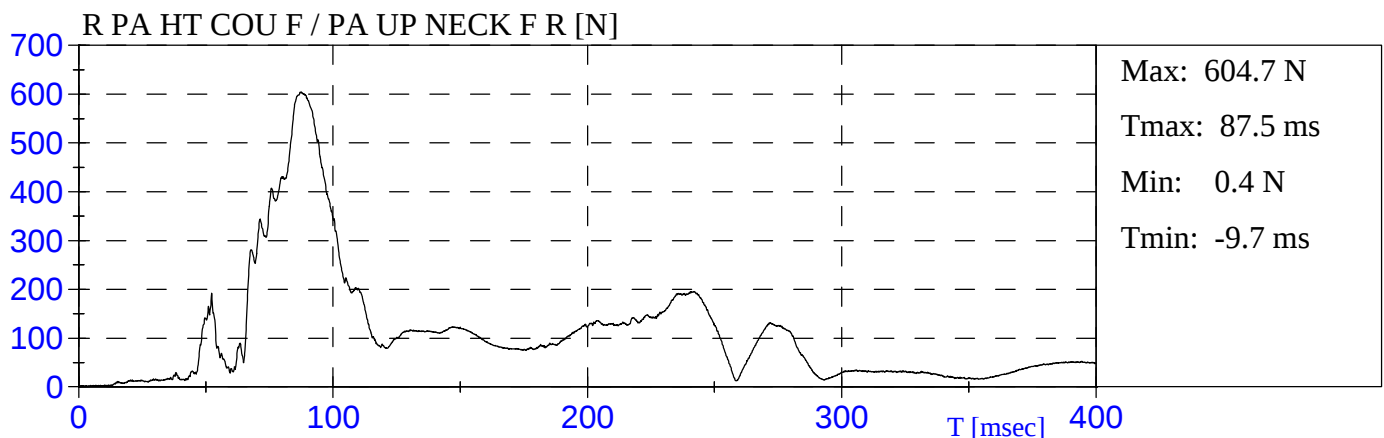
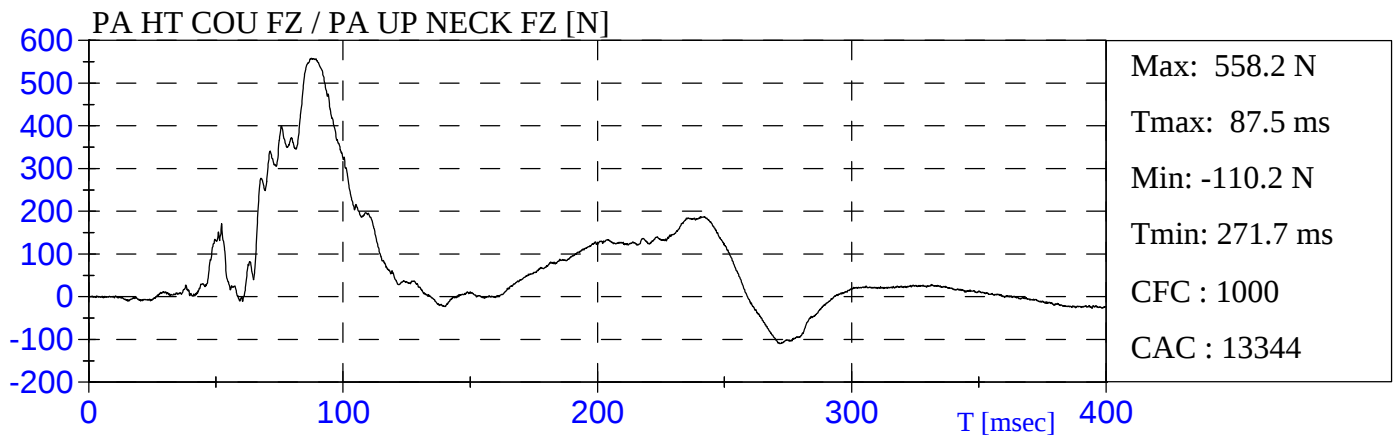
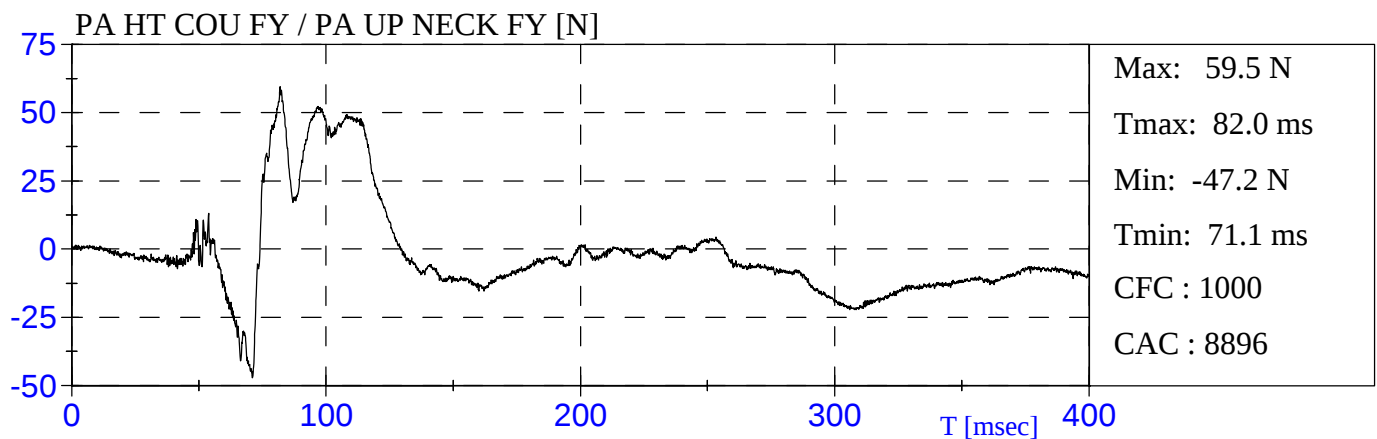
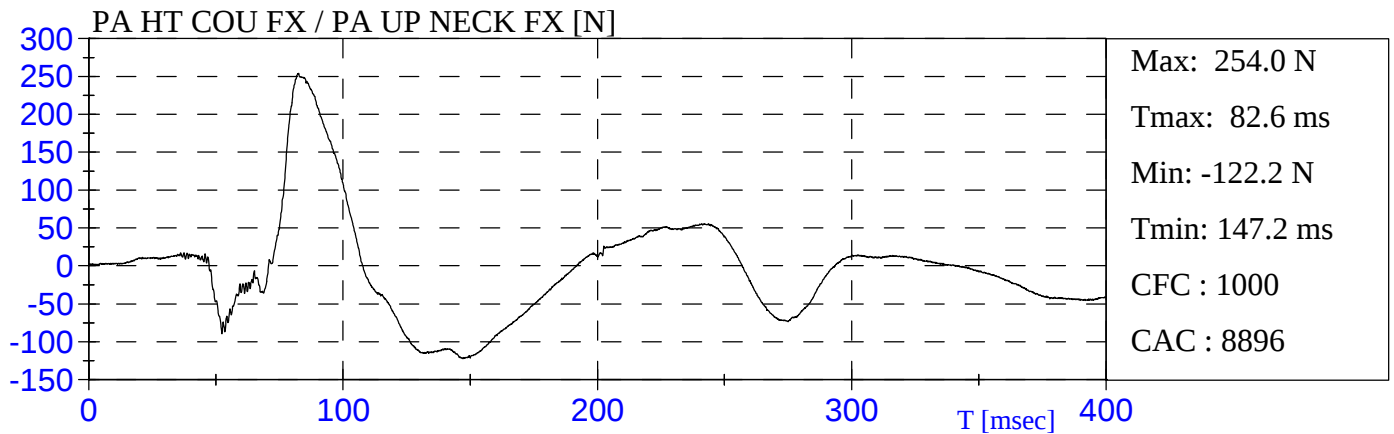
COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05
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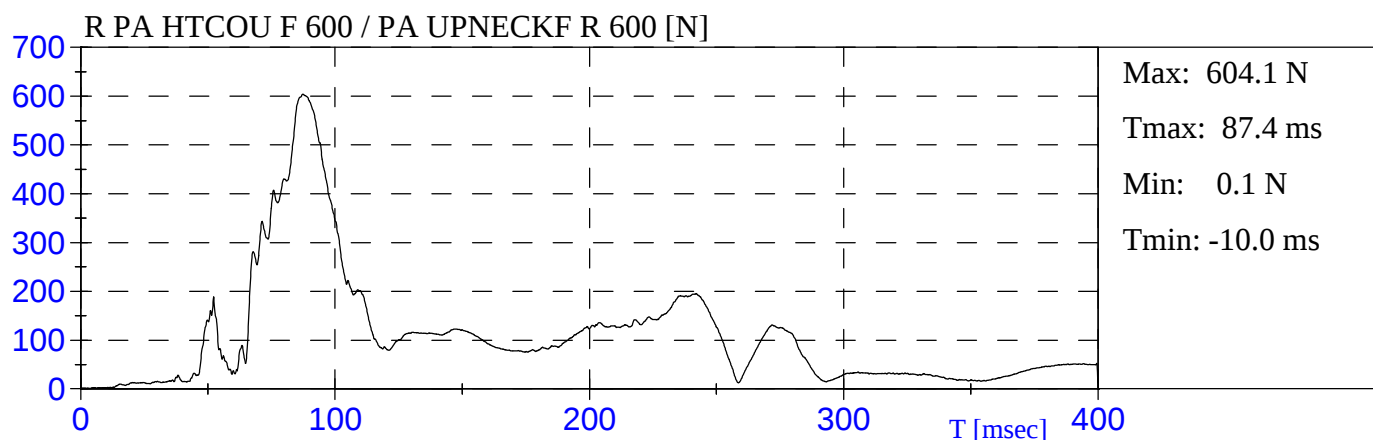
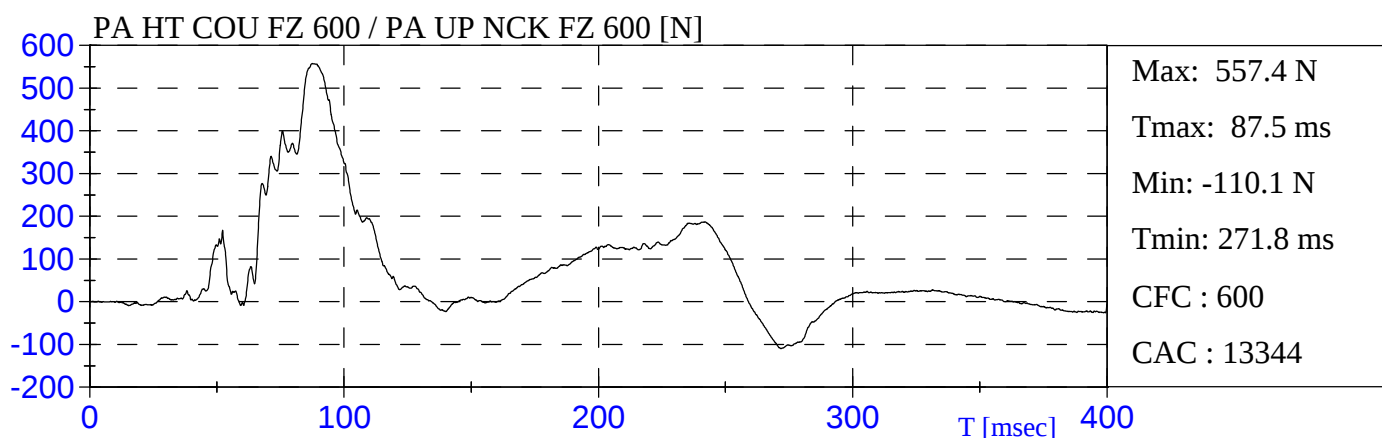
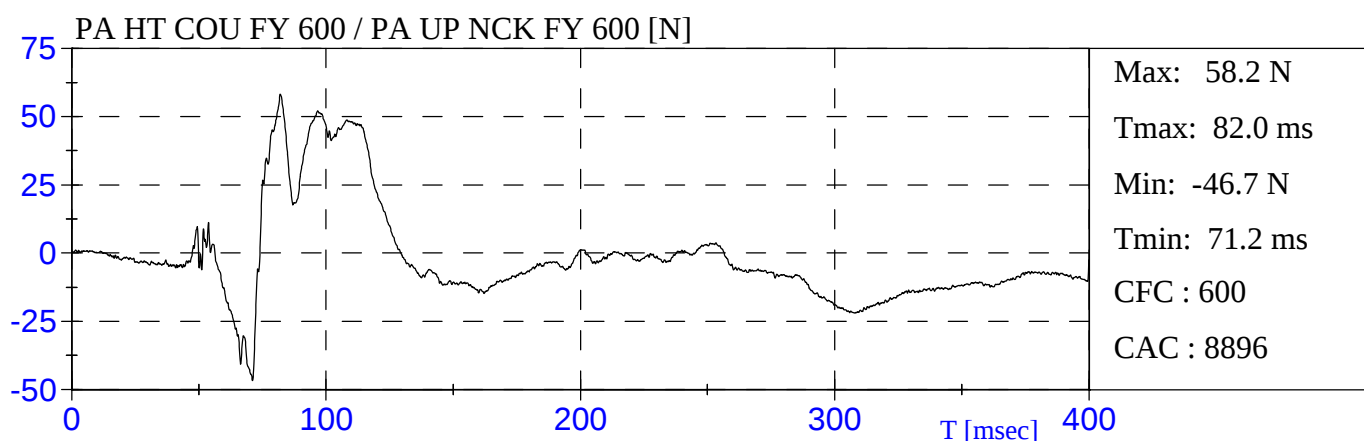
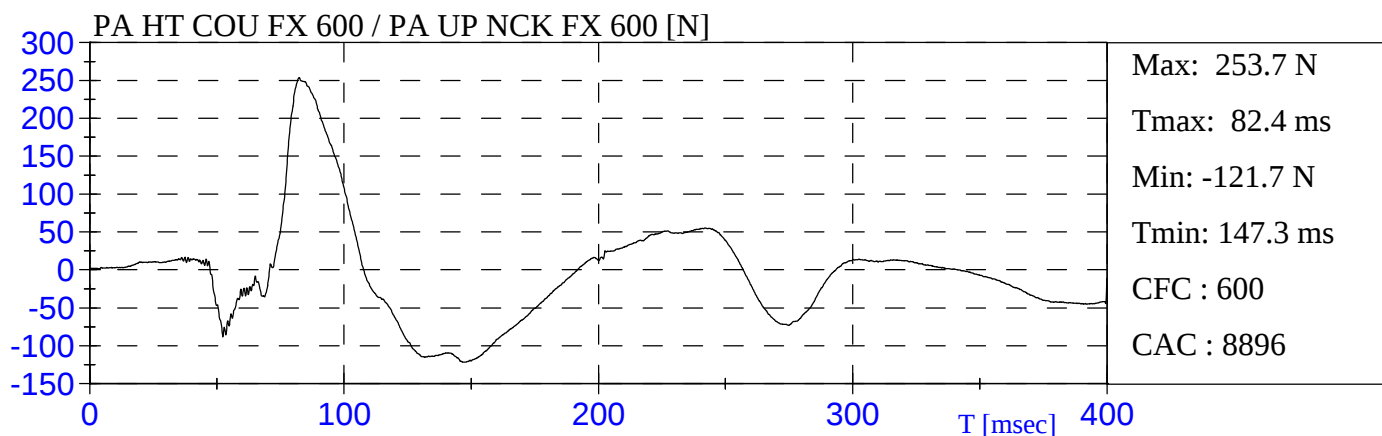


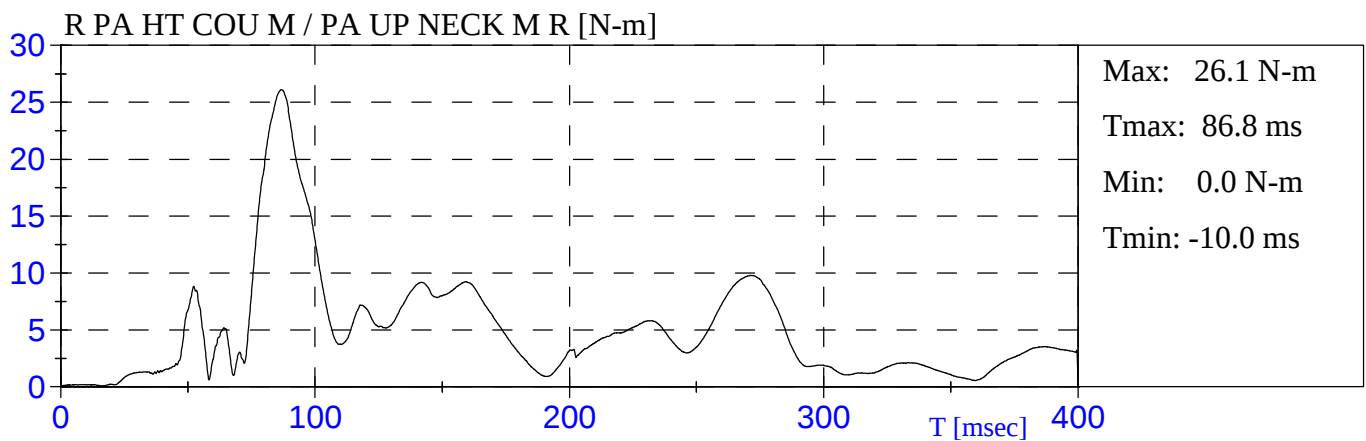
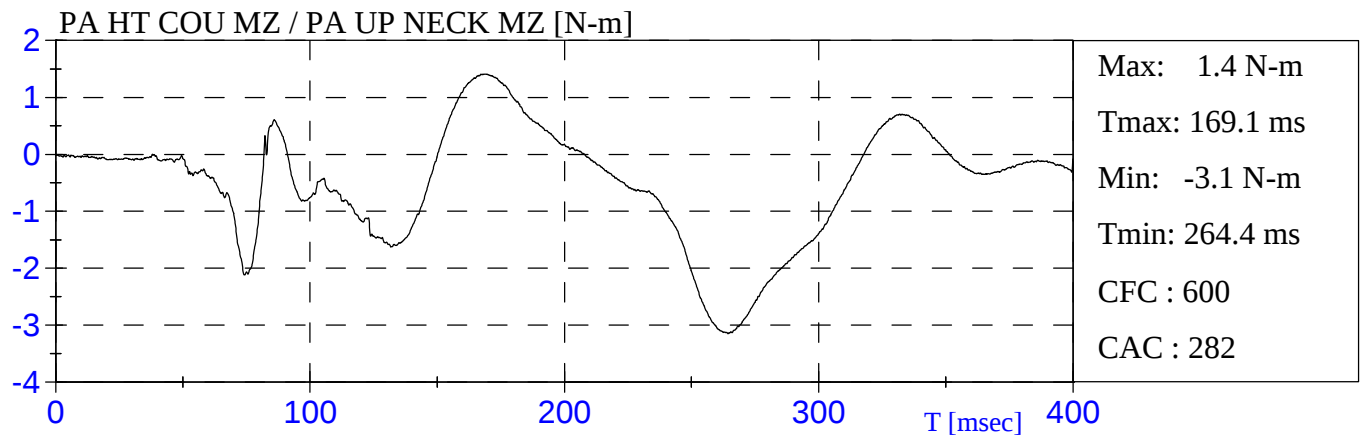
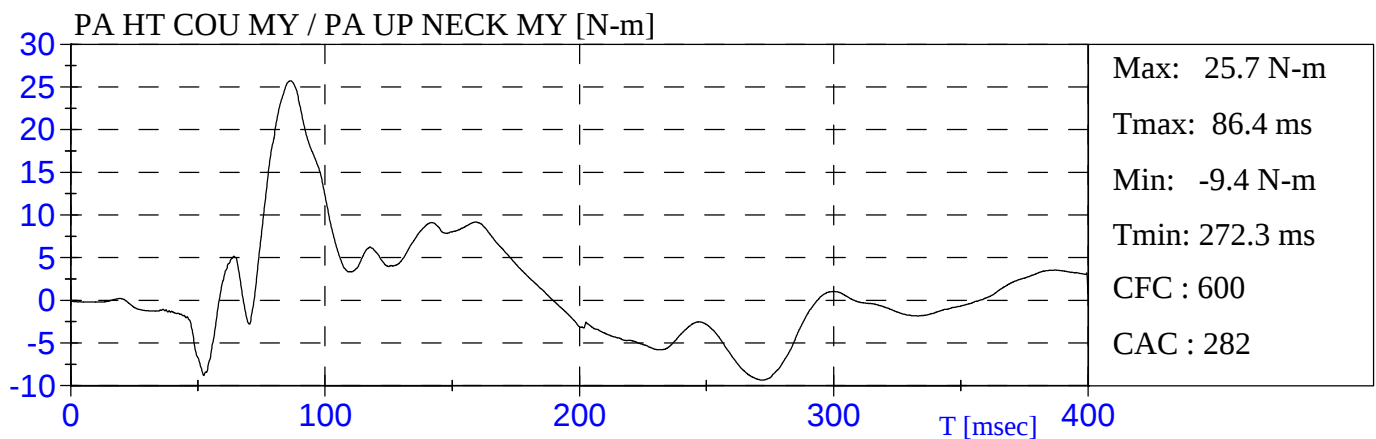
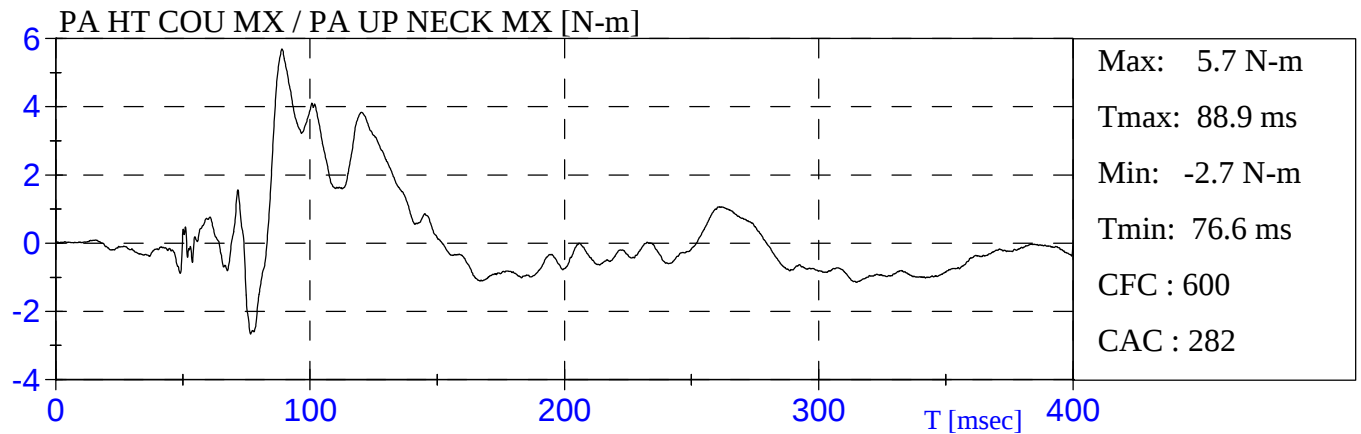




COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05
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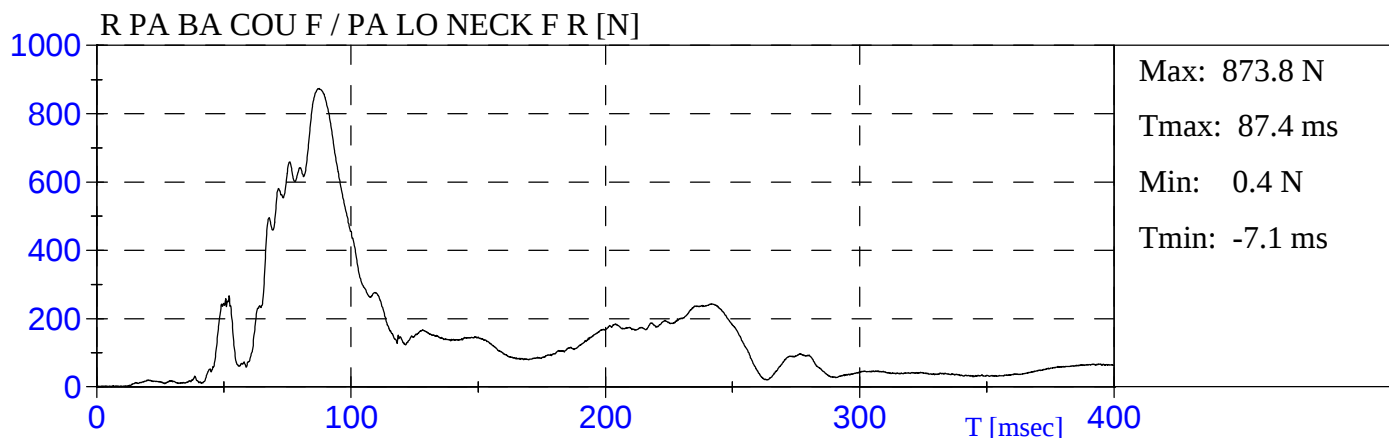
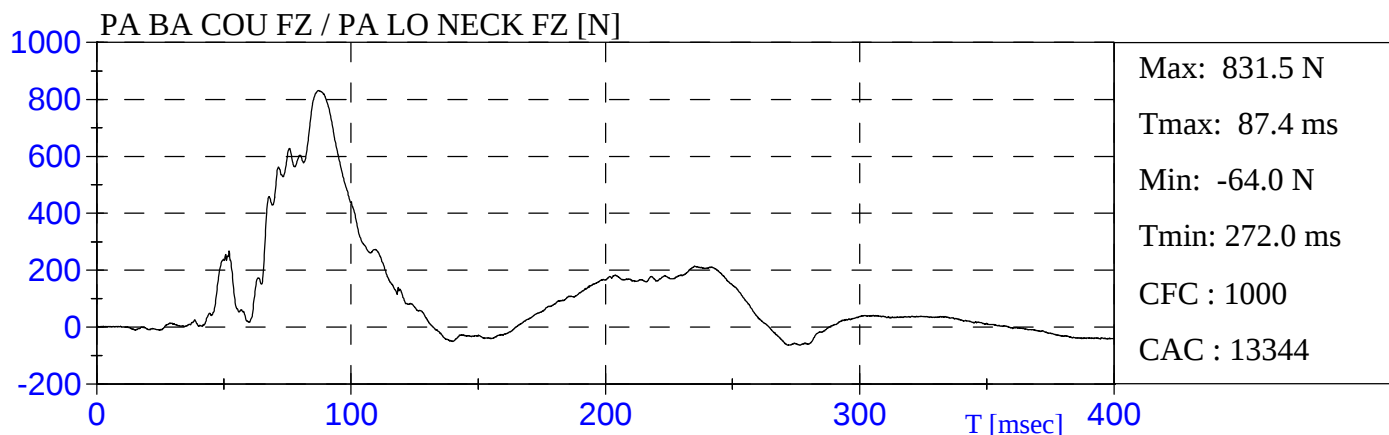
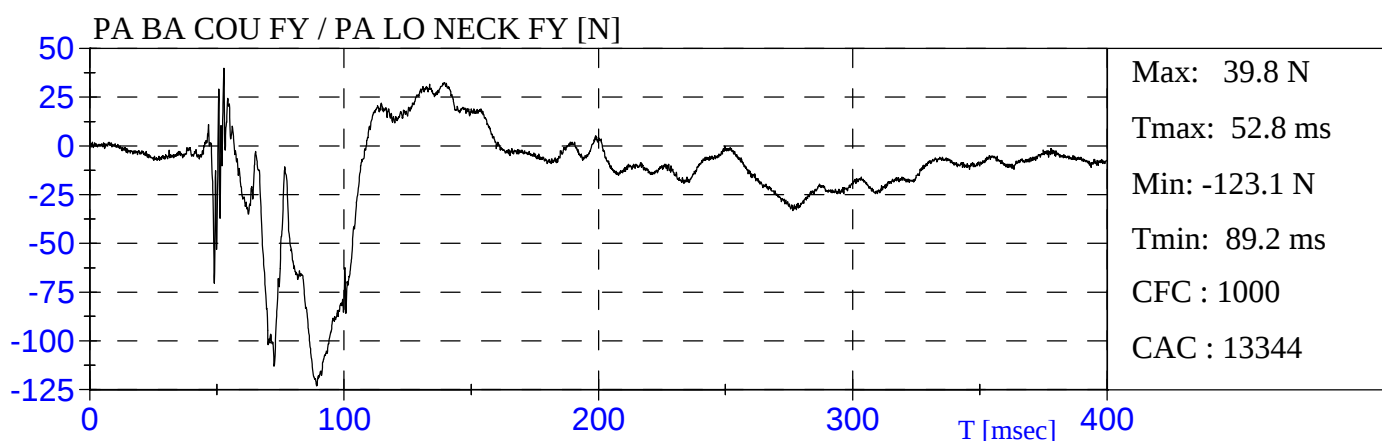
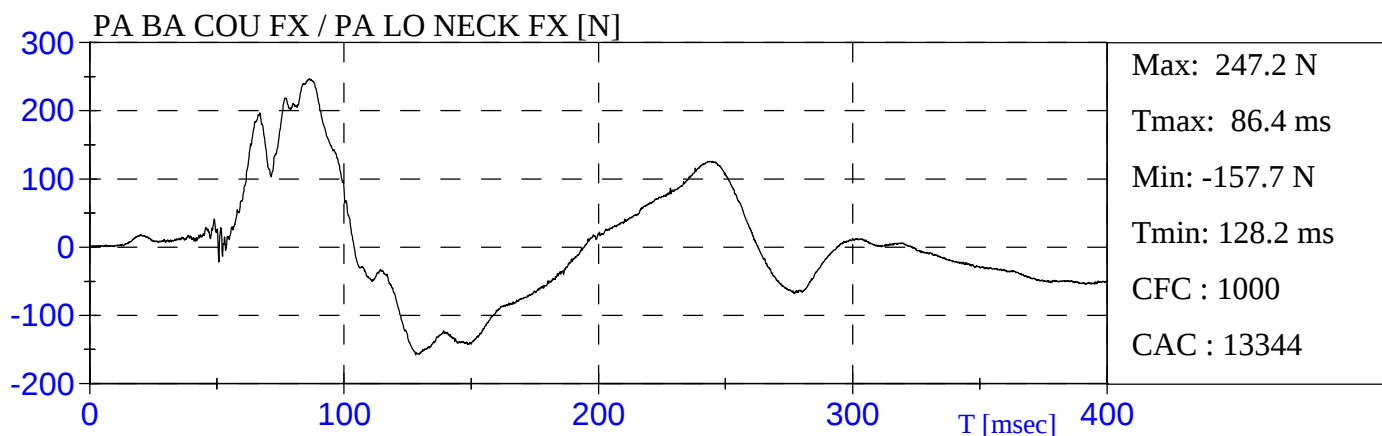


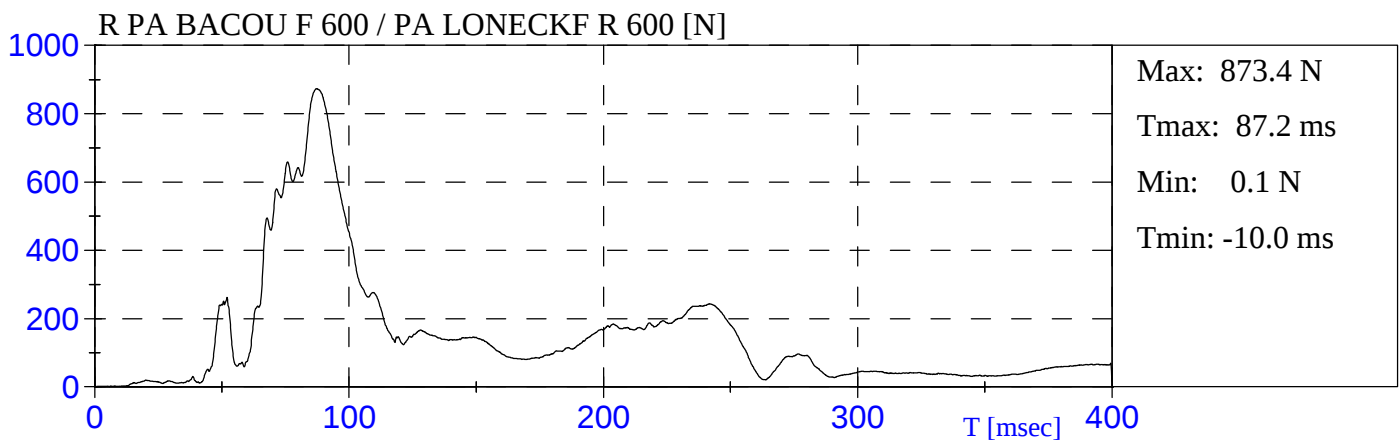
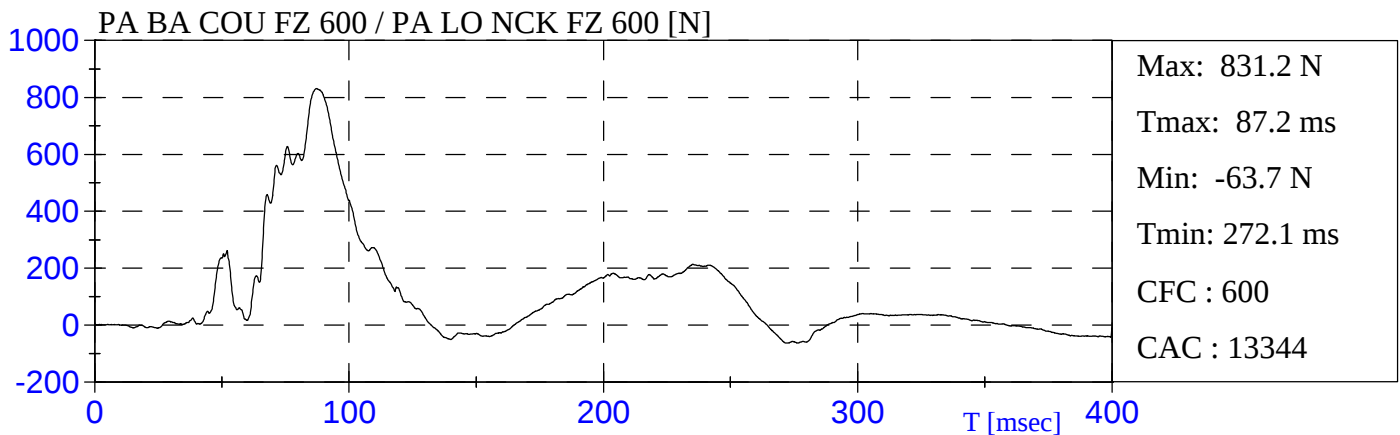
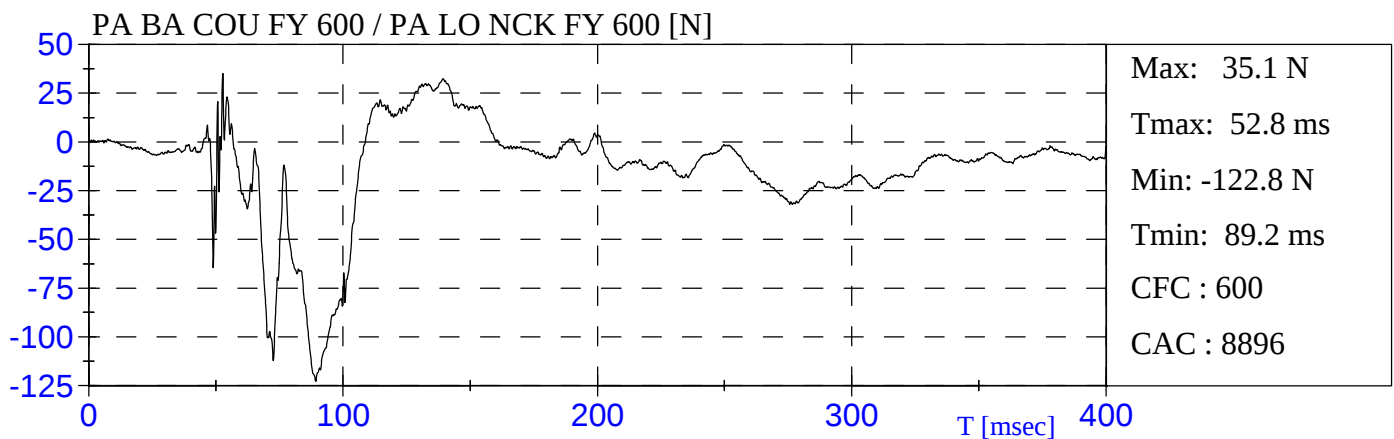
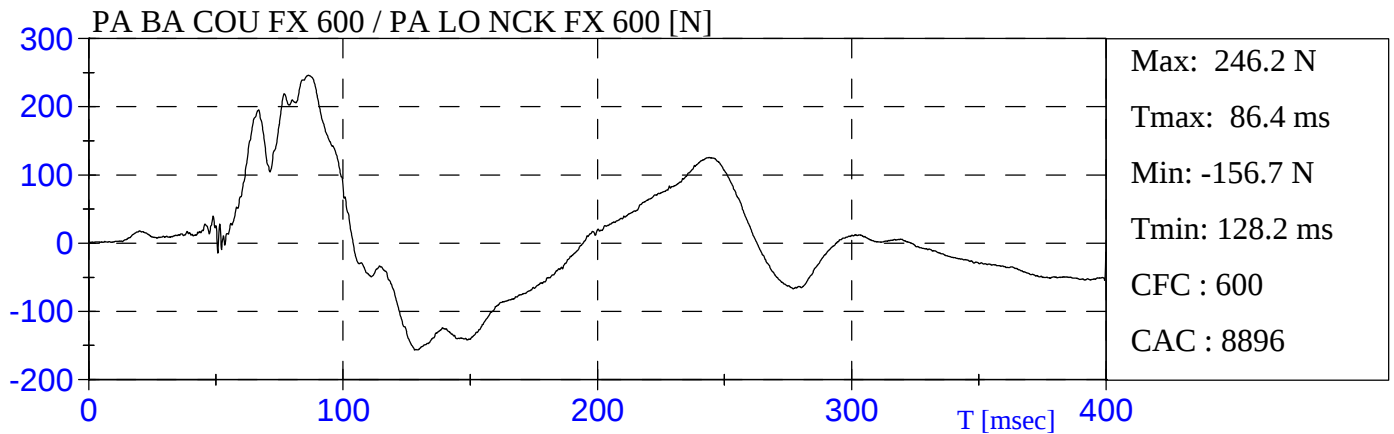


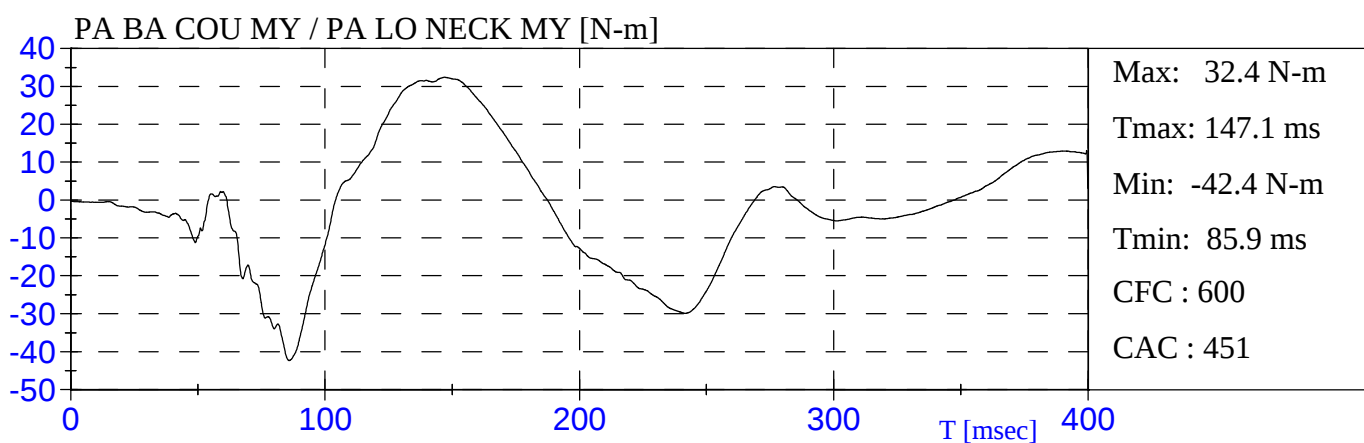
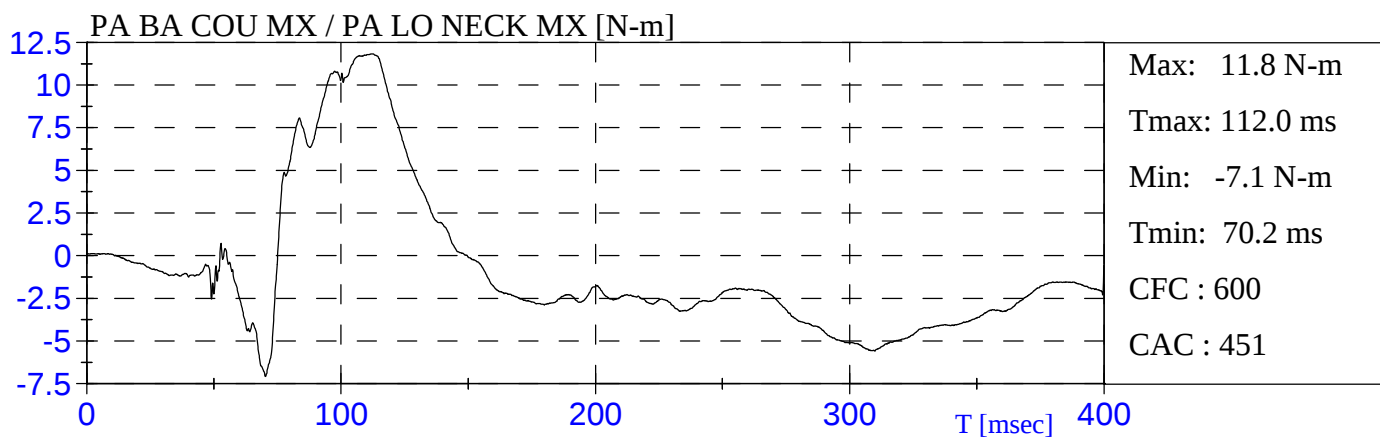


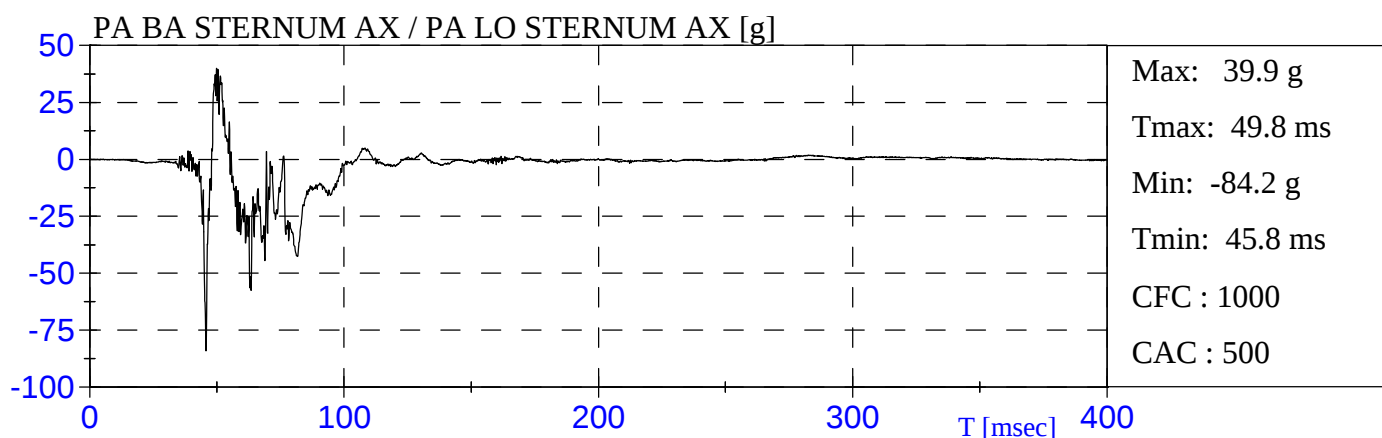
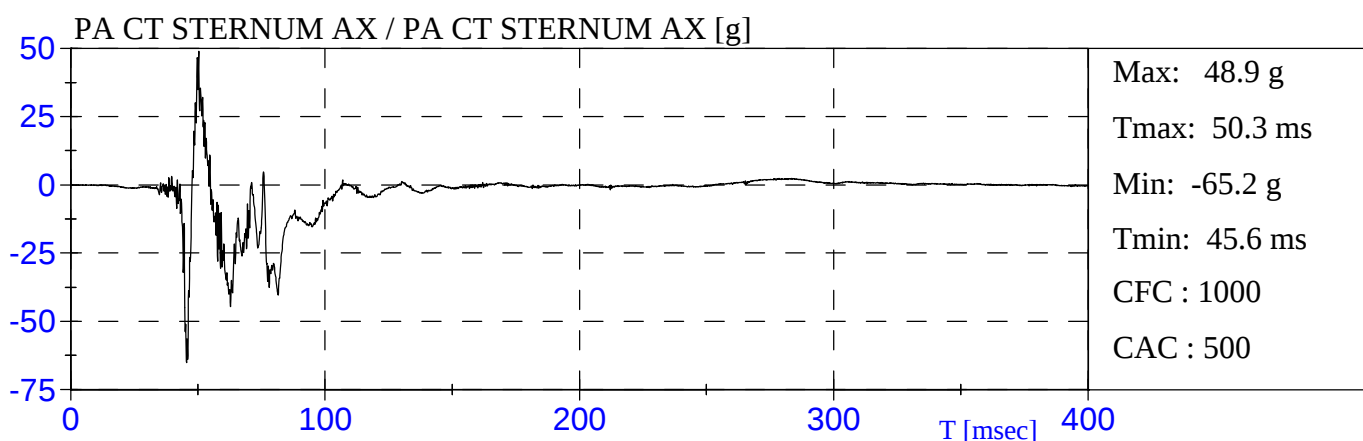
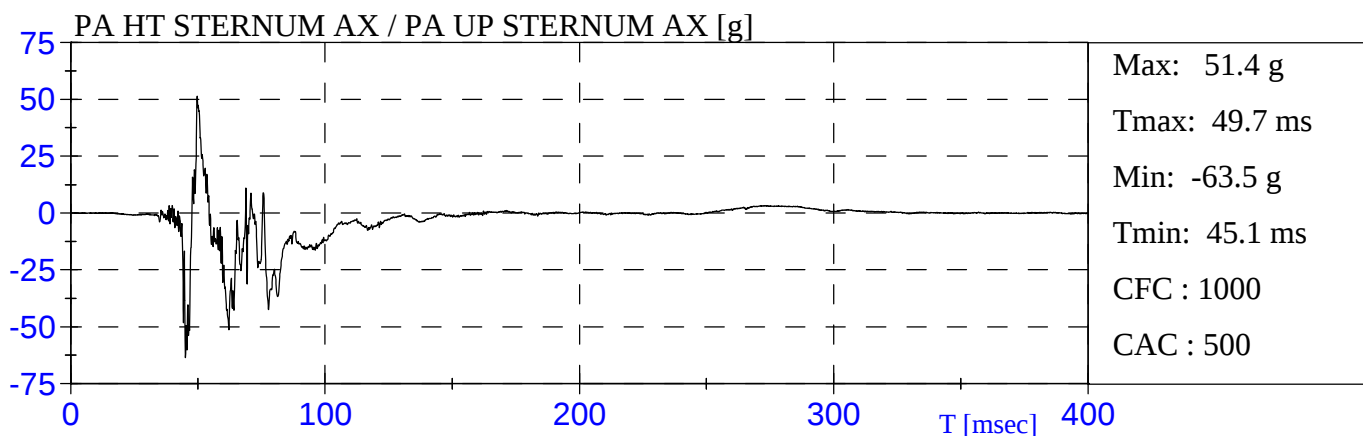
COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

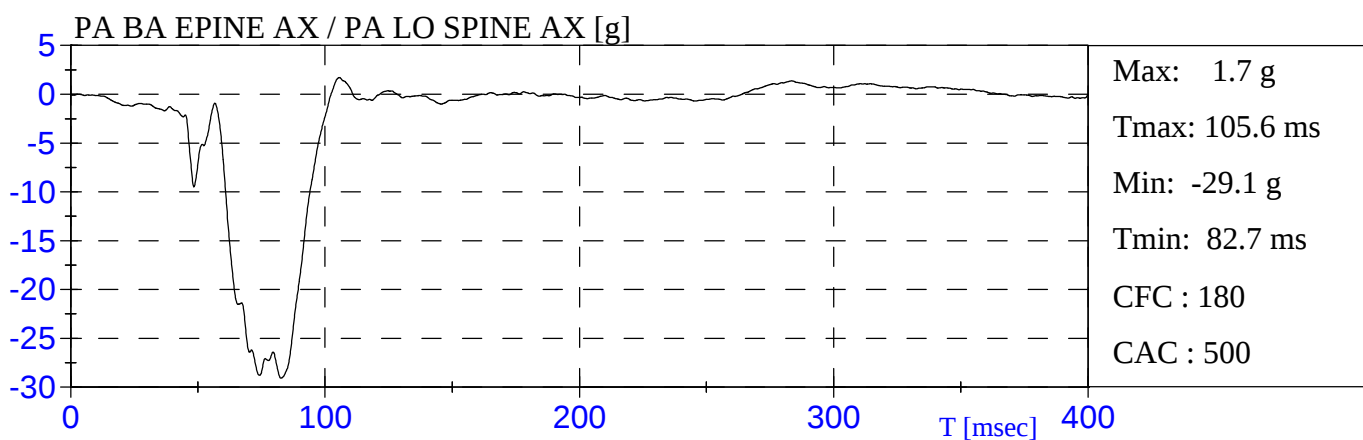
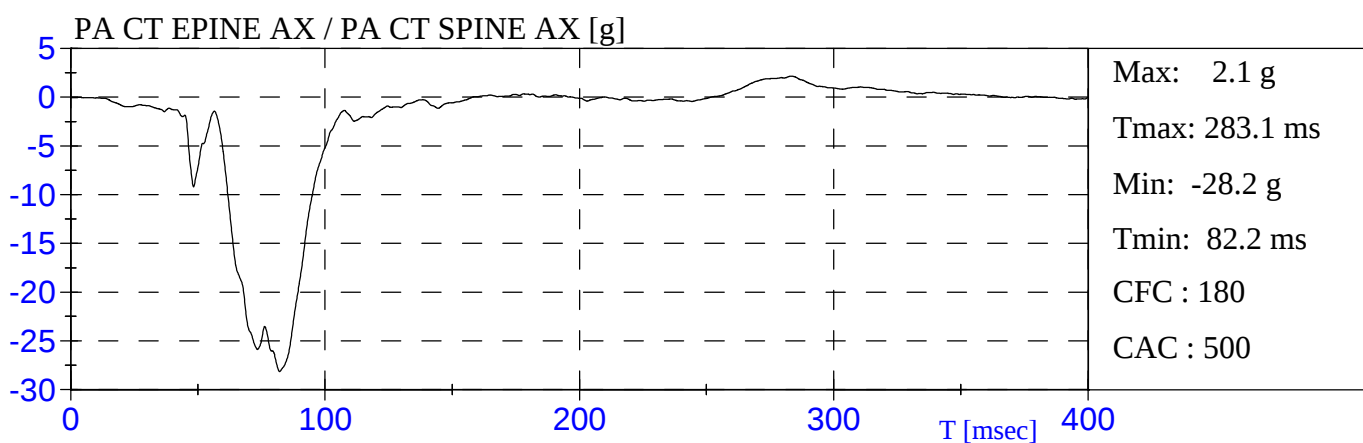
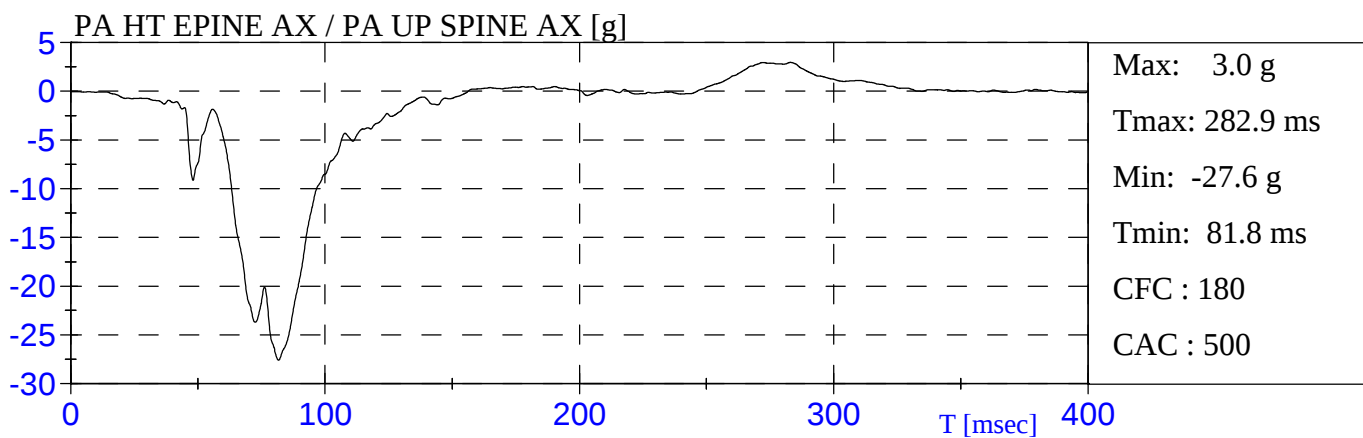
Date: 2004-03-05
N° TC / TC No.: TC03-233

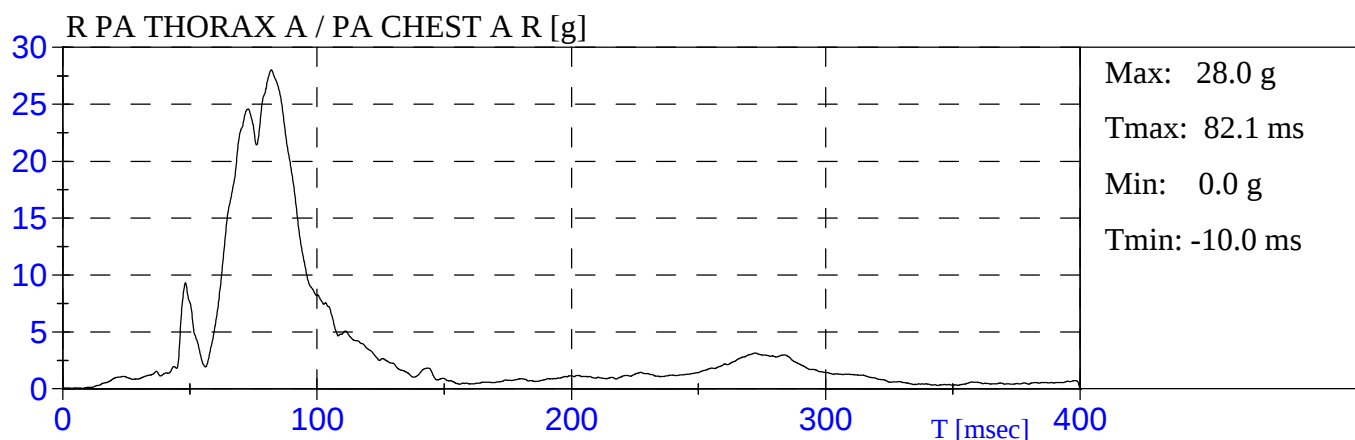
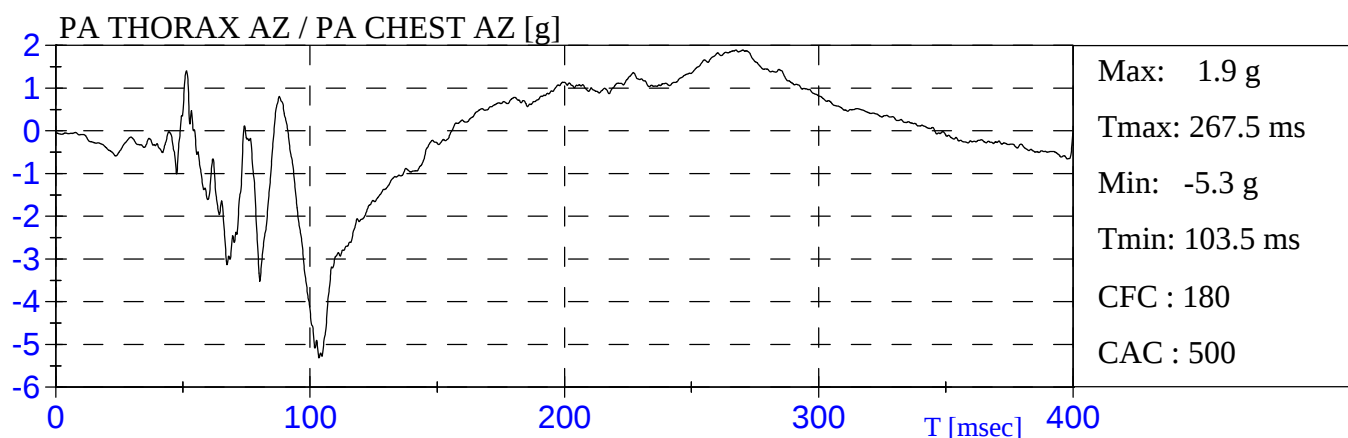
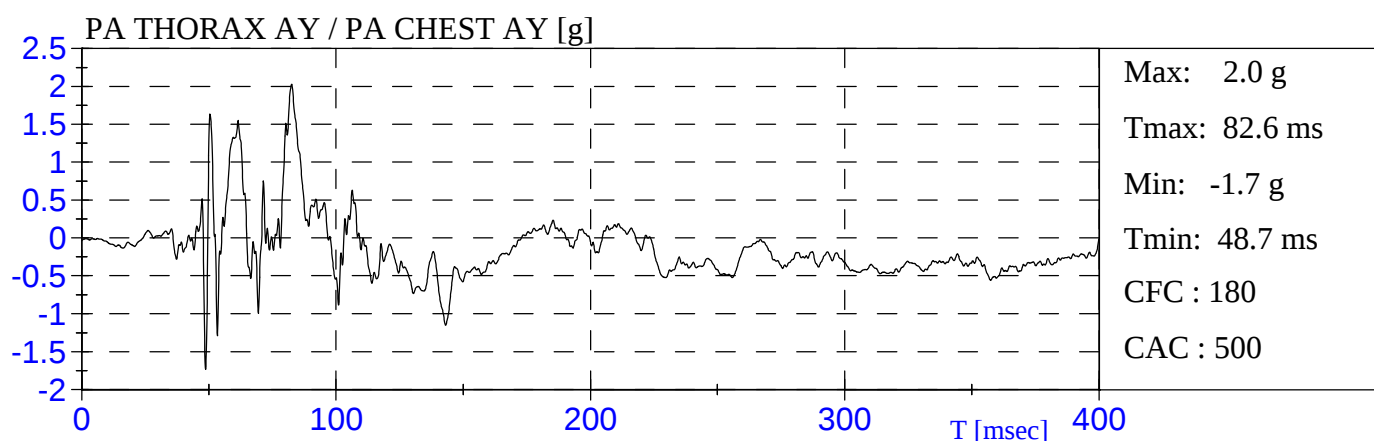
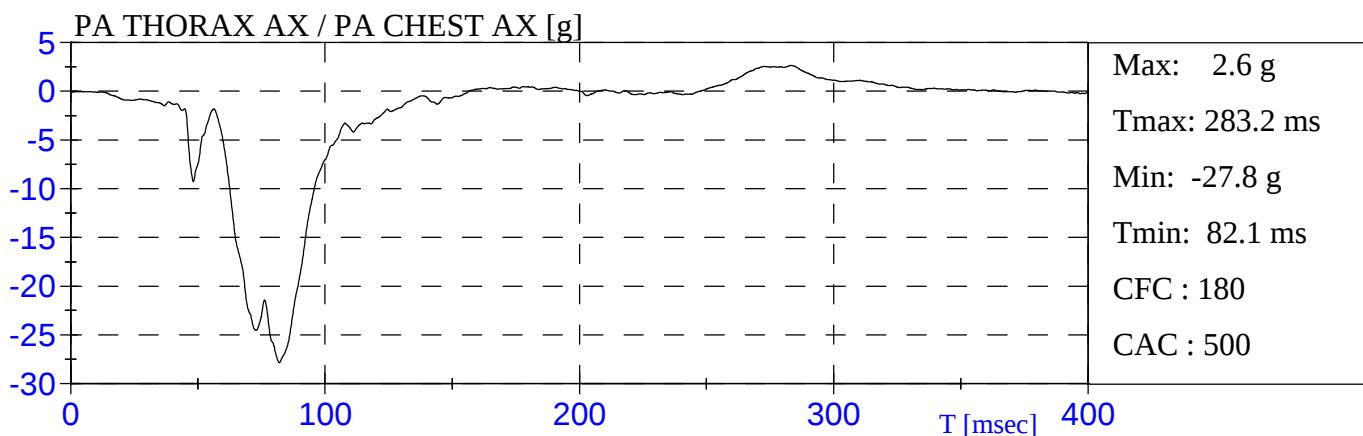


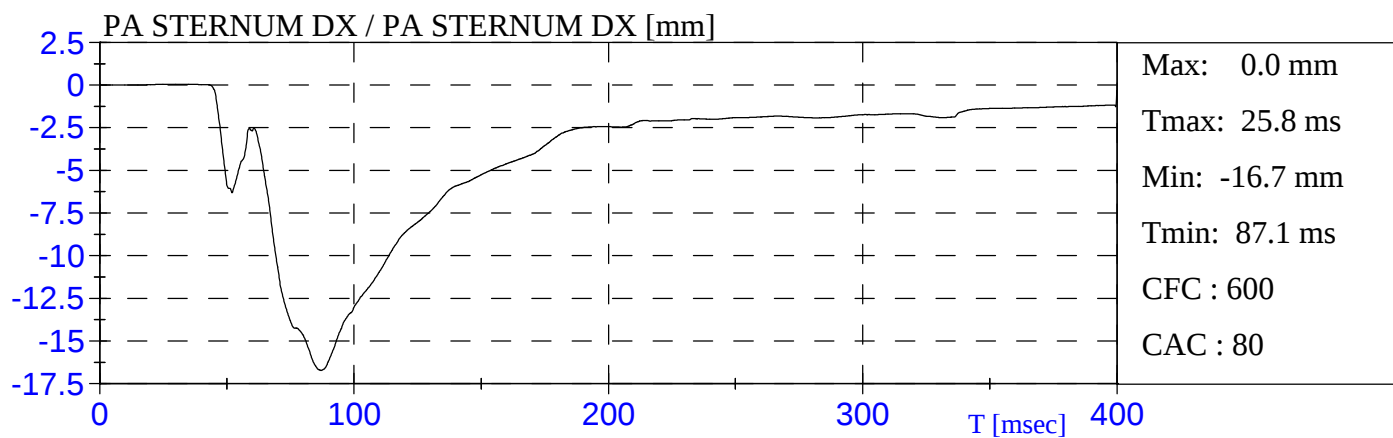


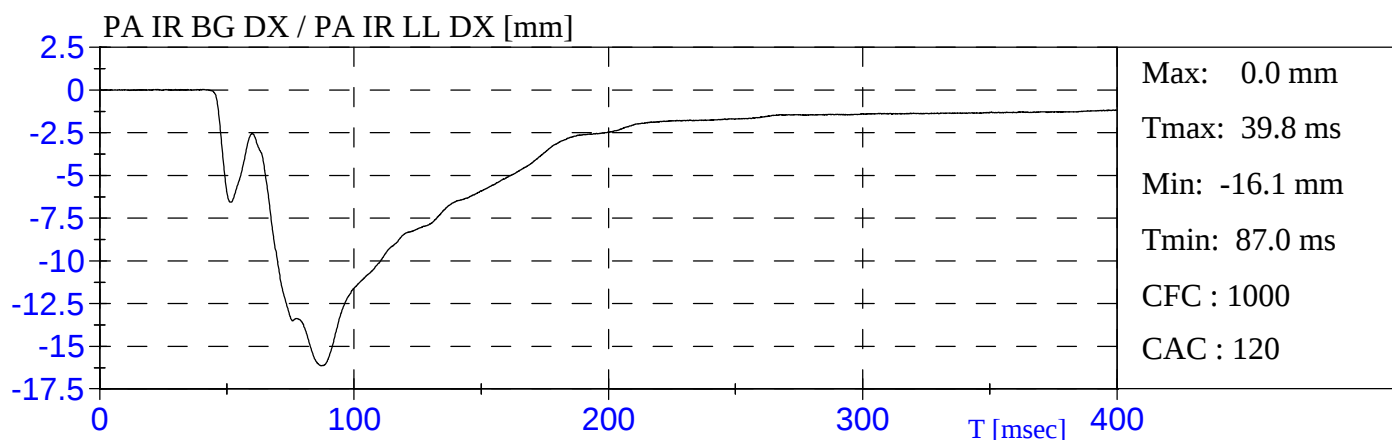
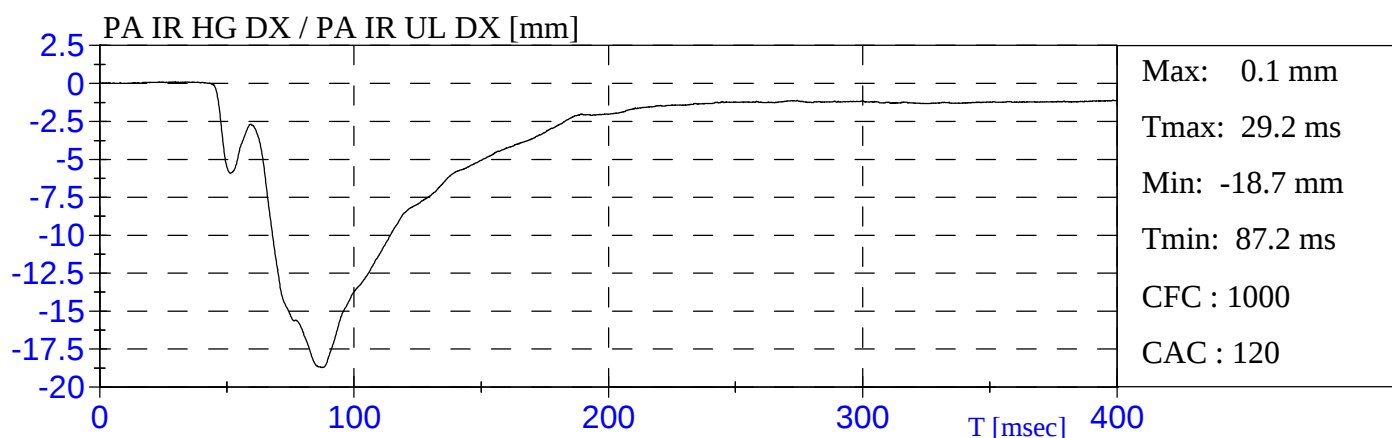
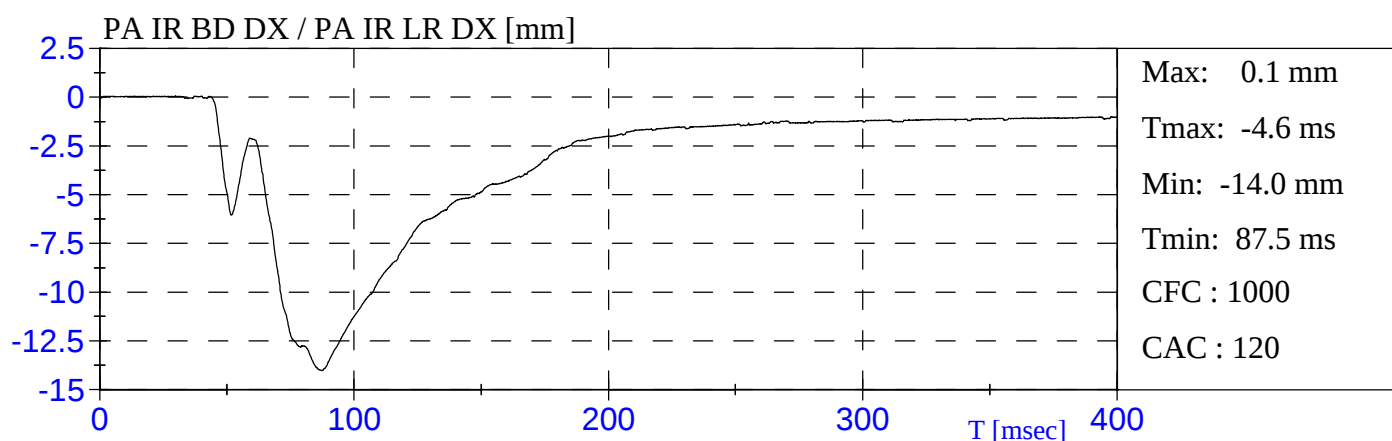
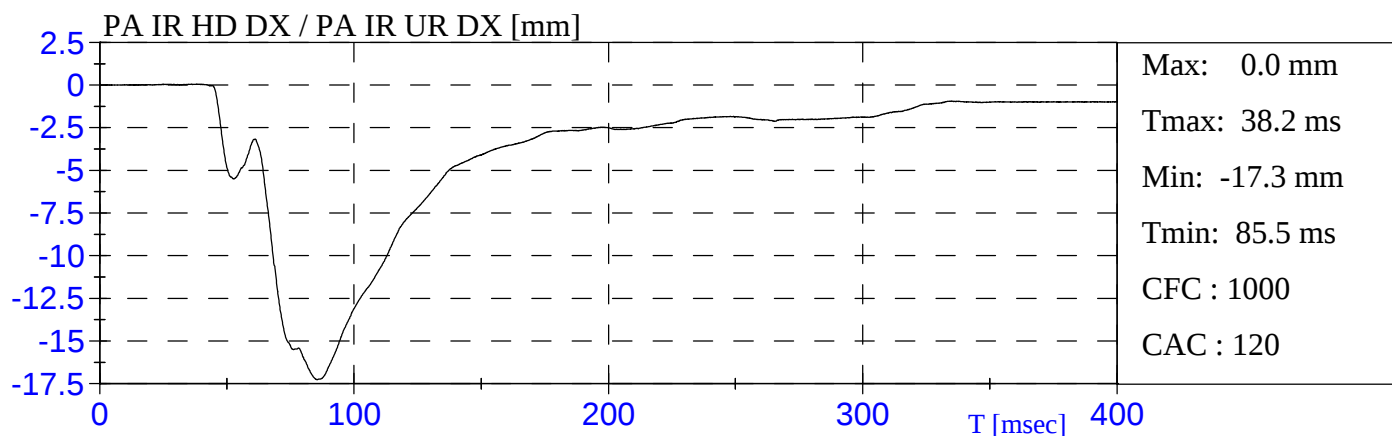


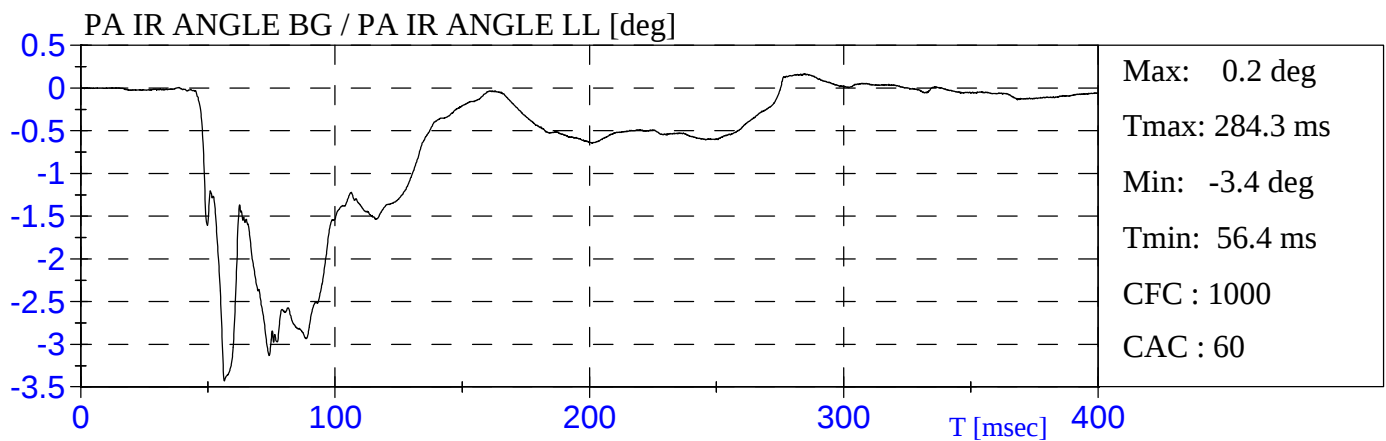
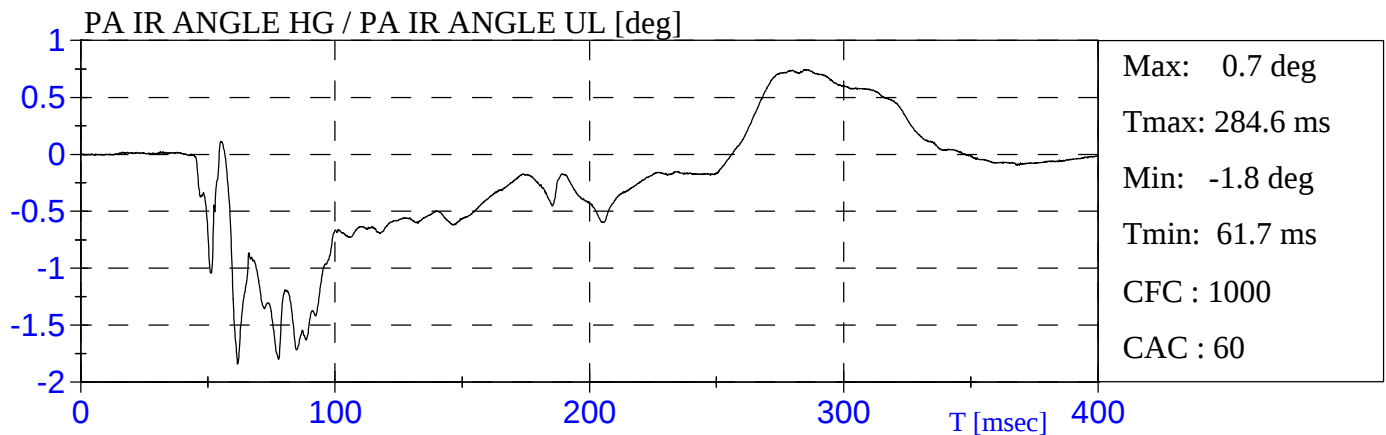
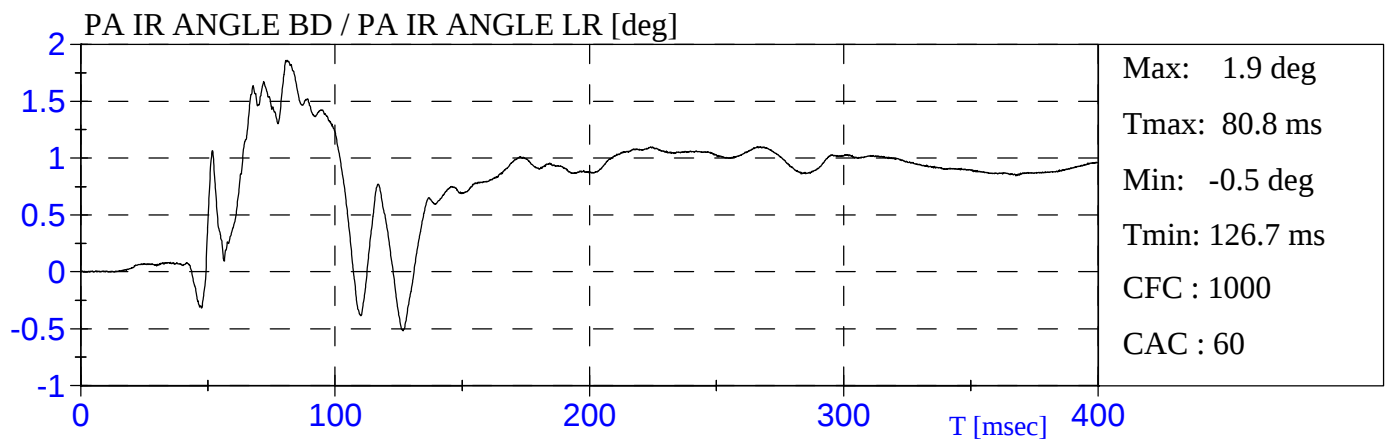
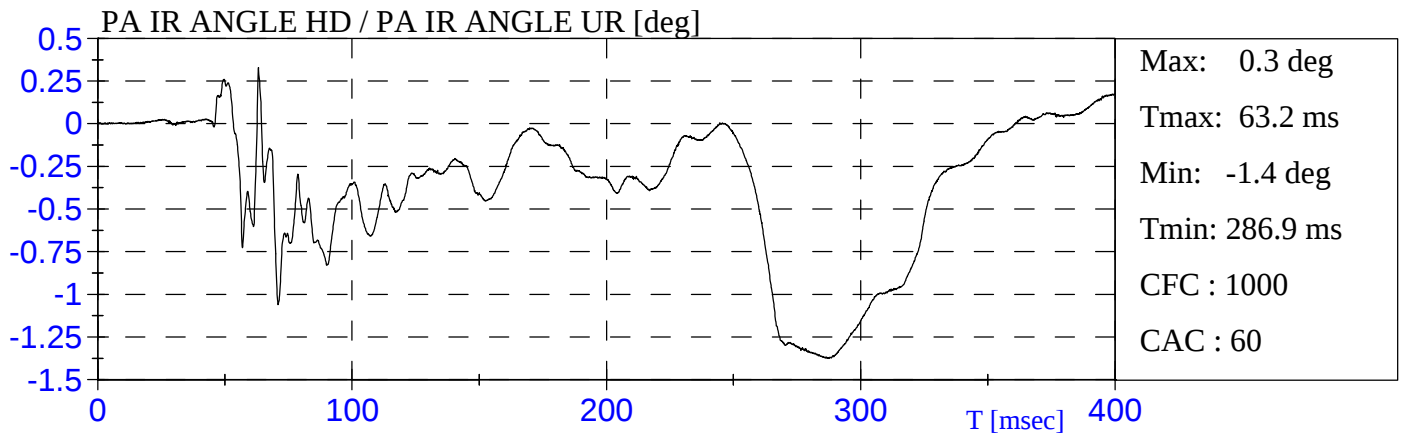


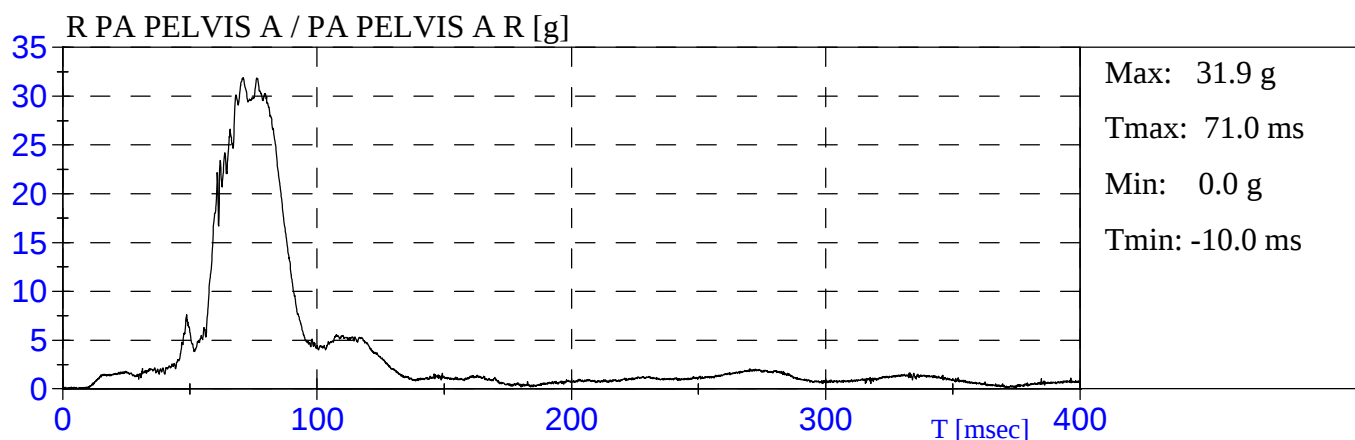
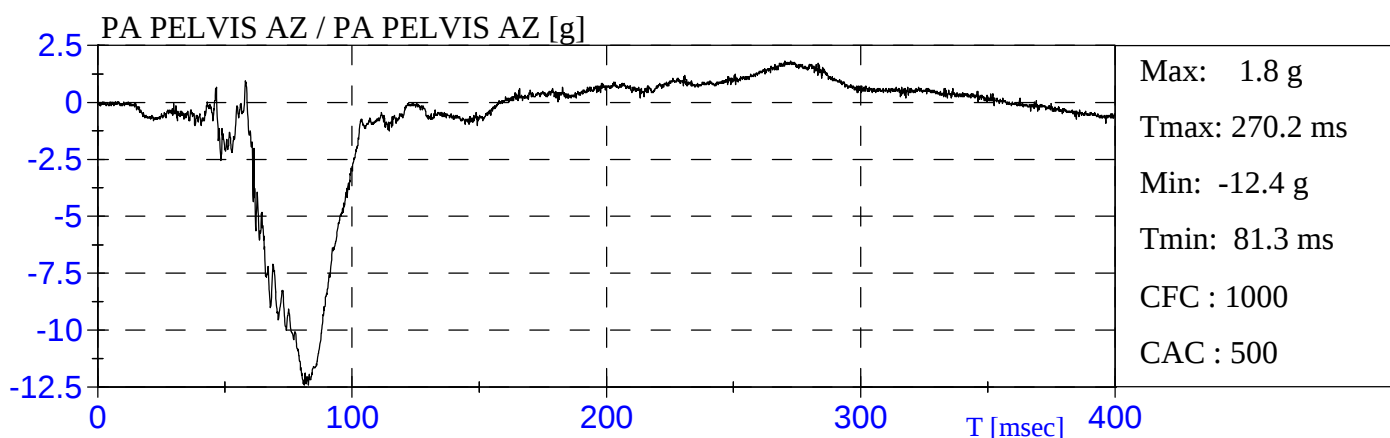
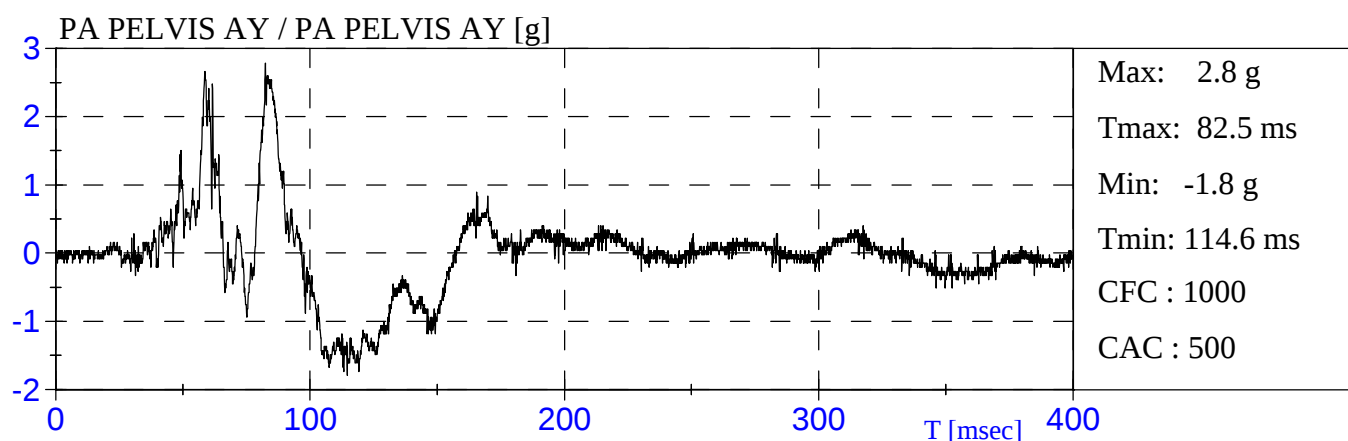
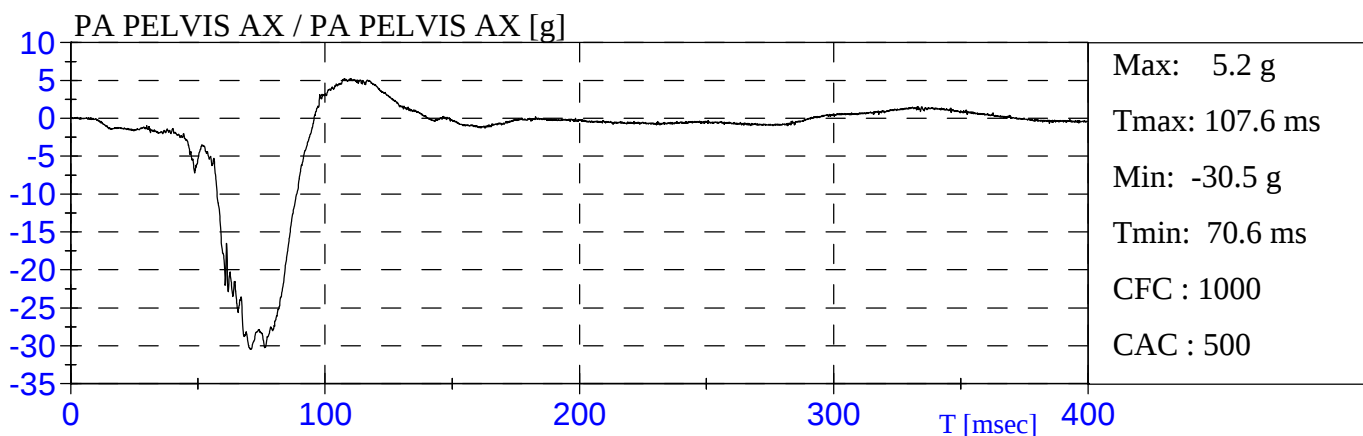


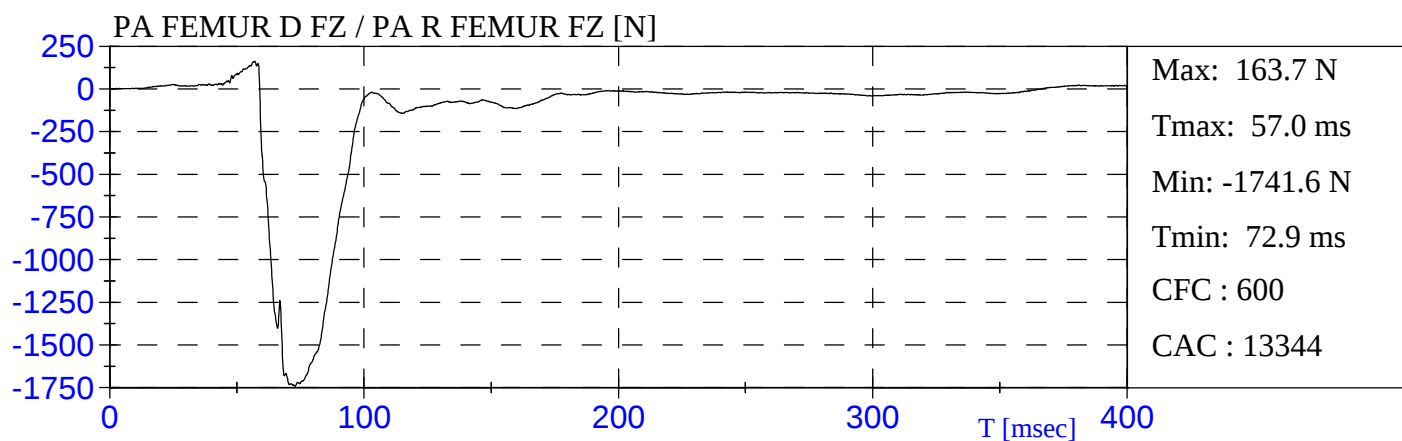
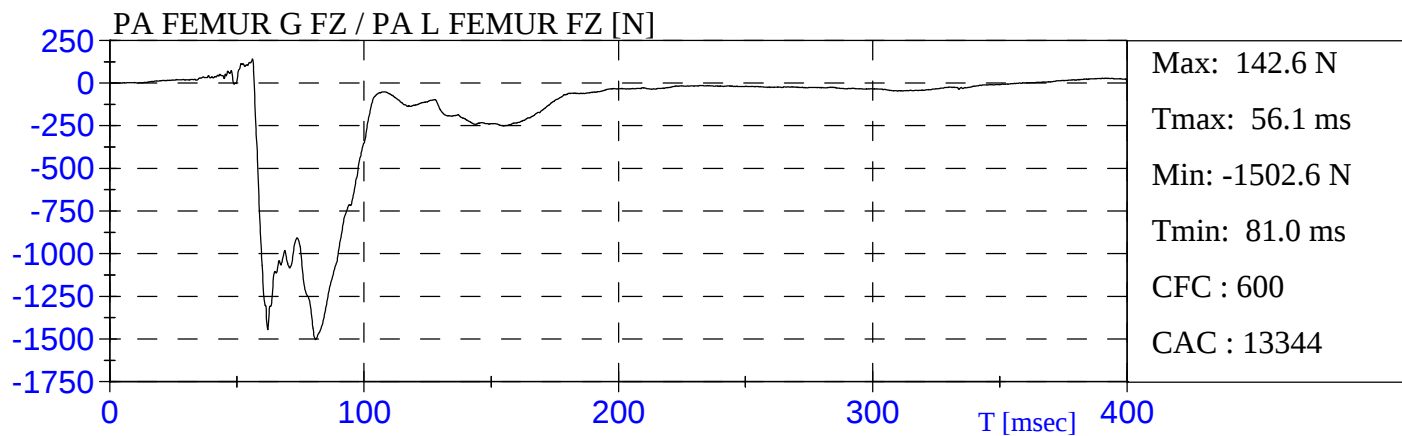


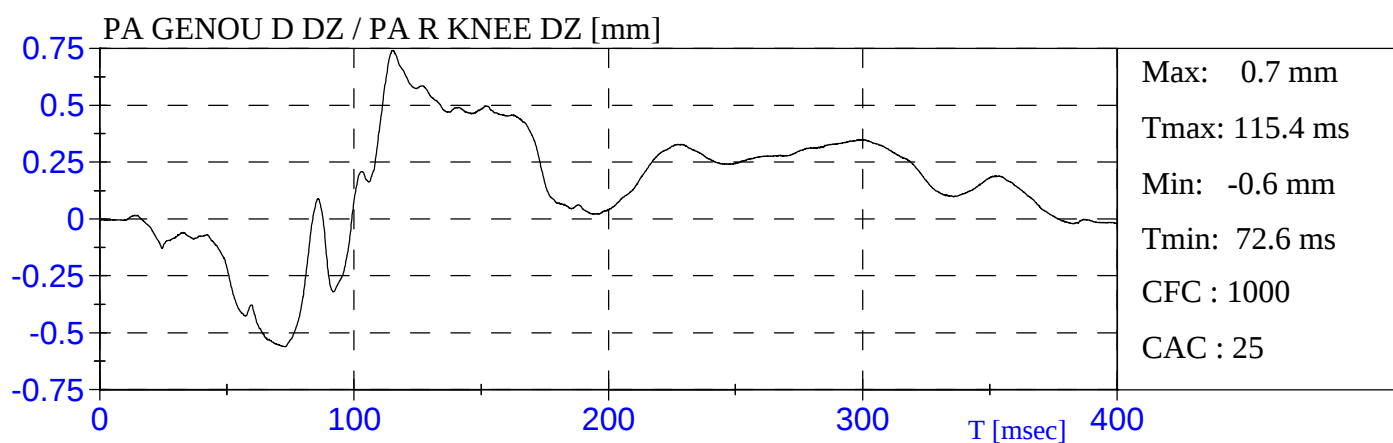
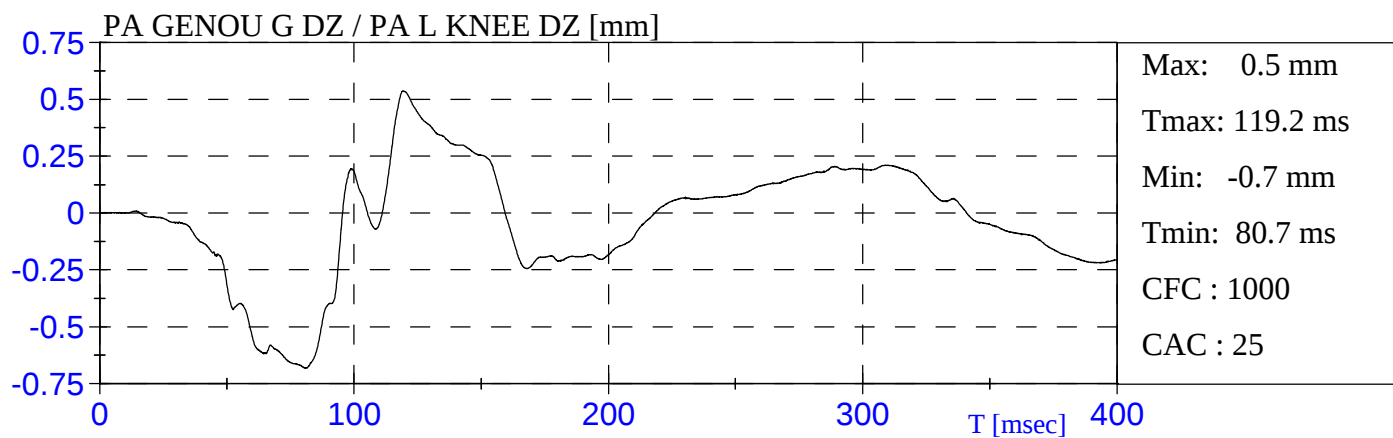


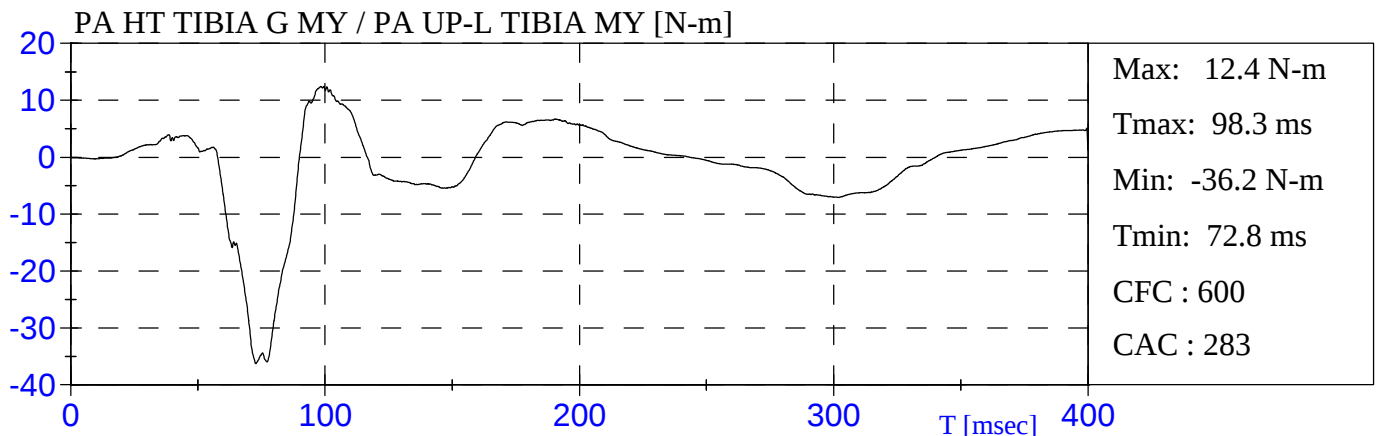
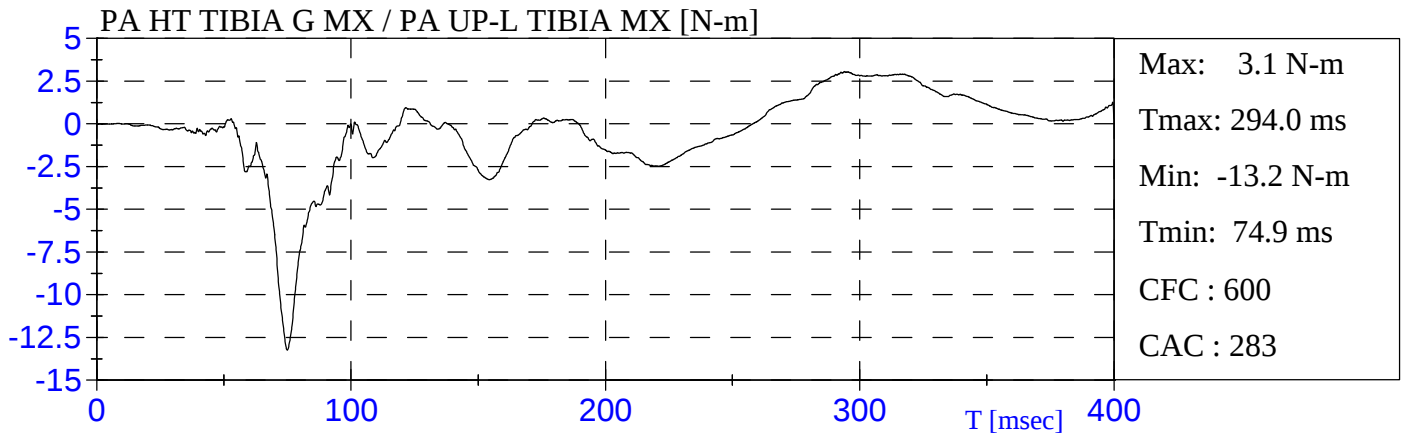
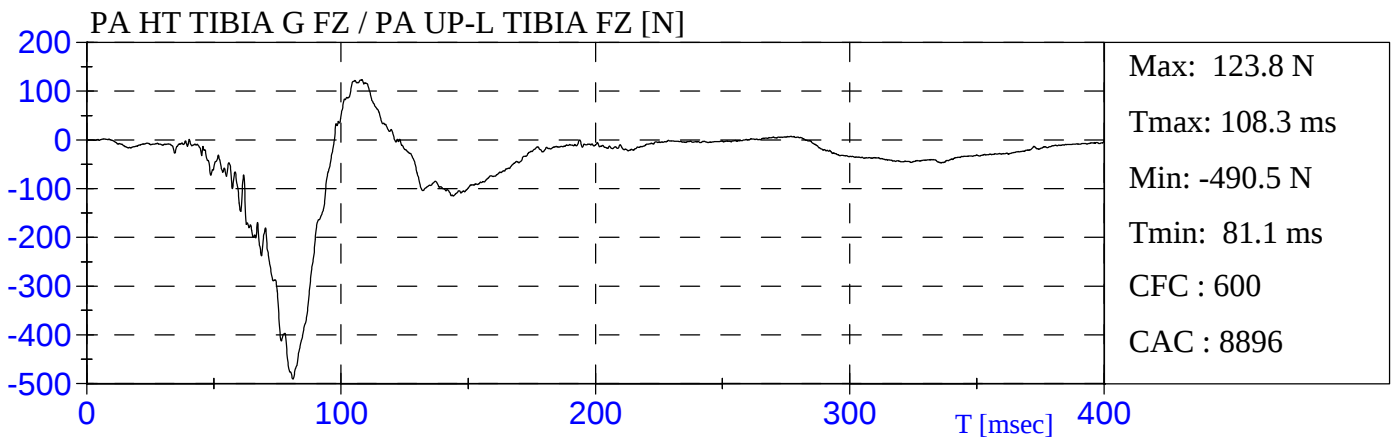
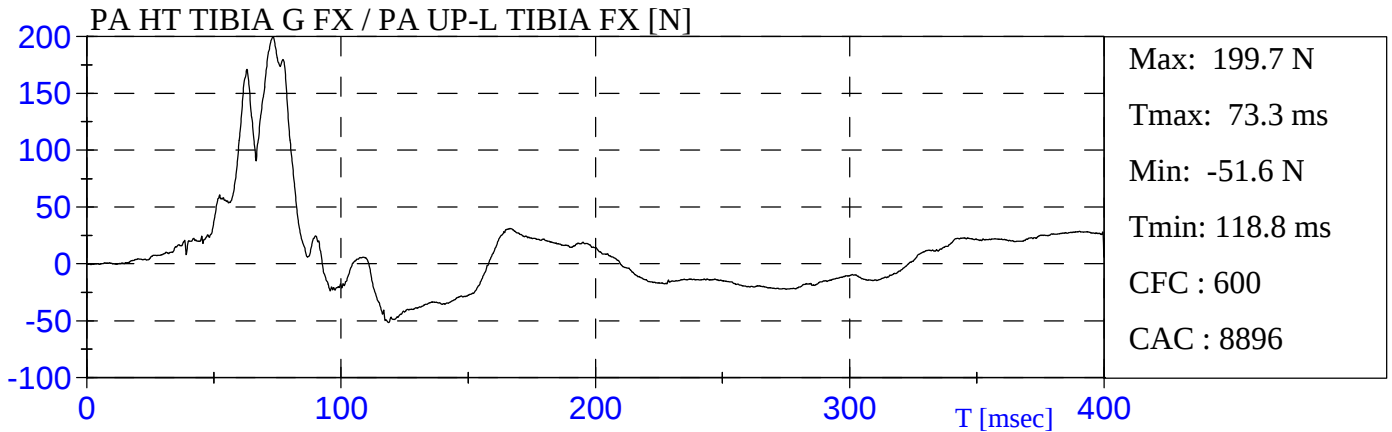


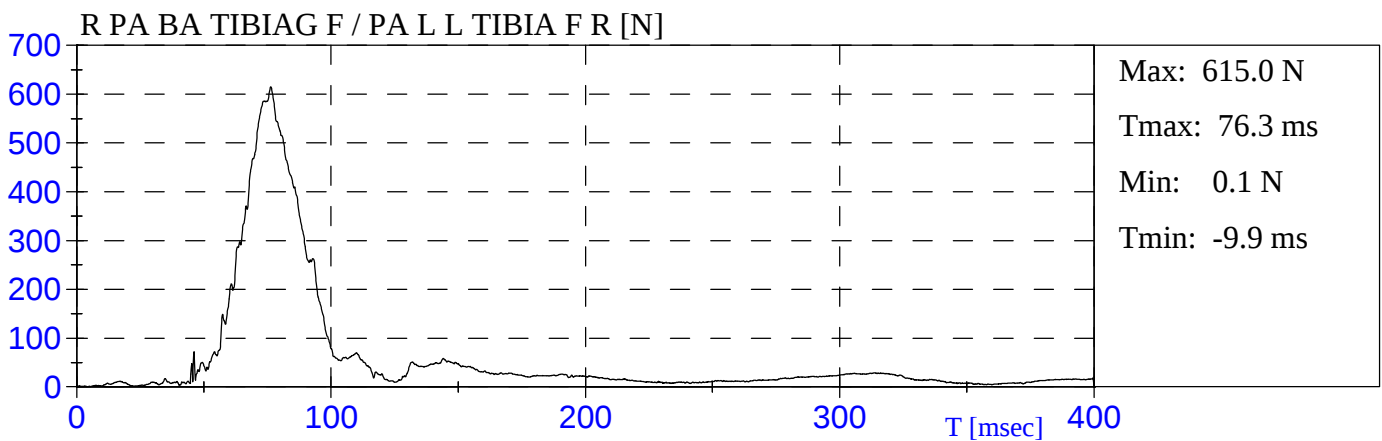
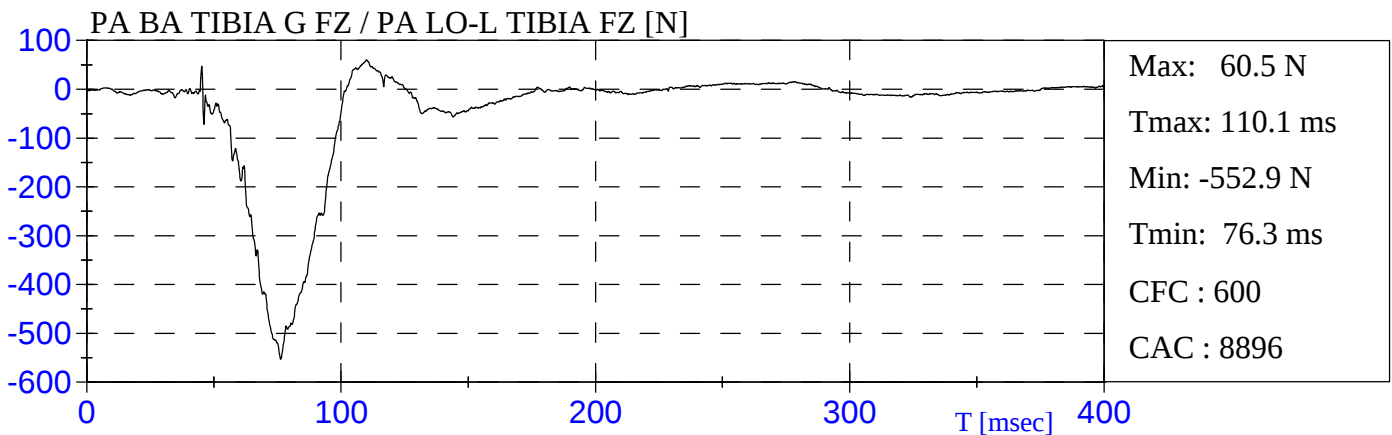
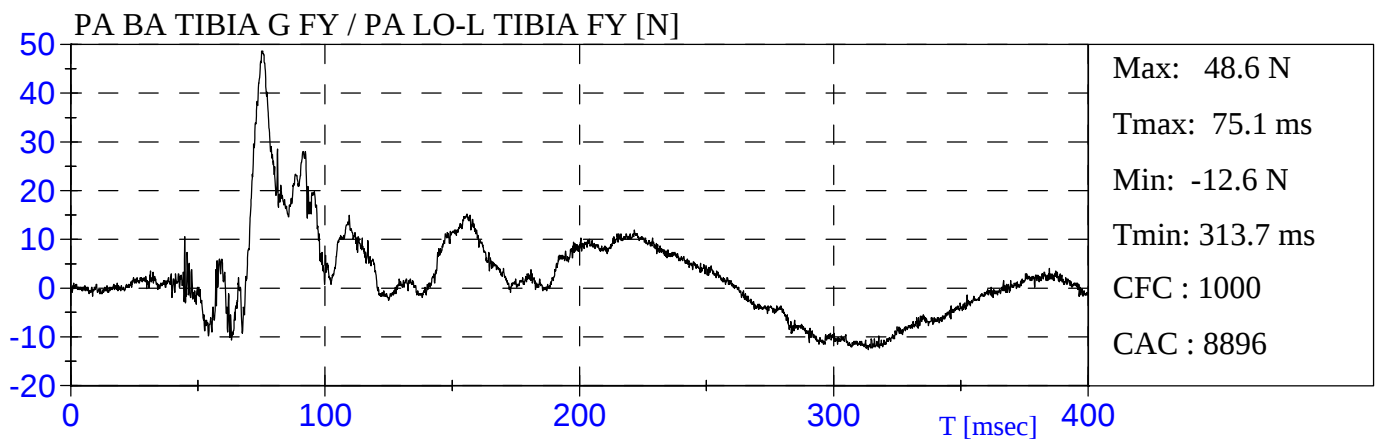
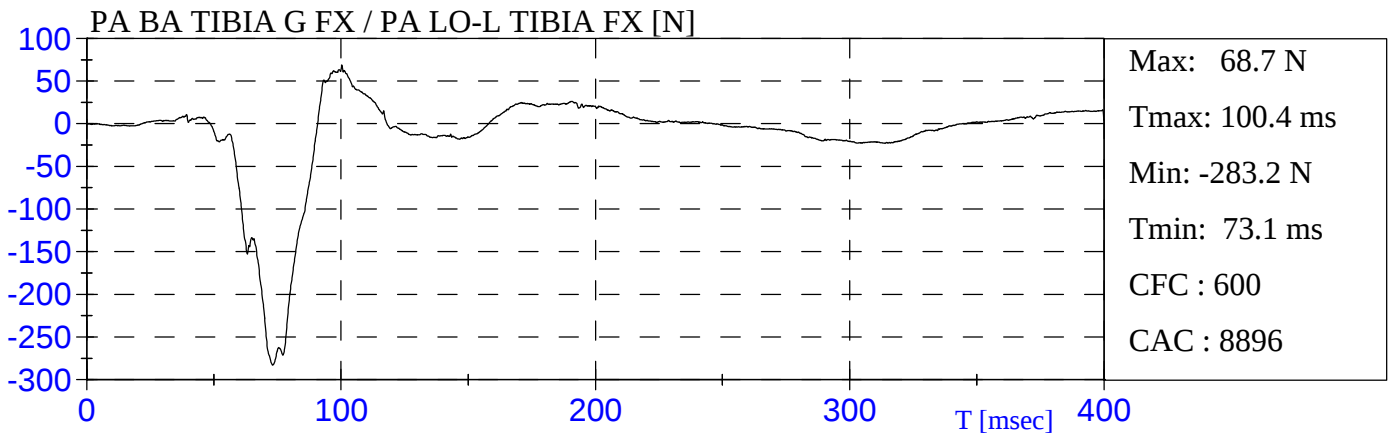


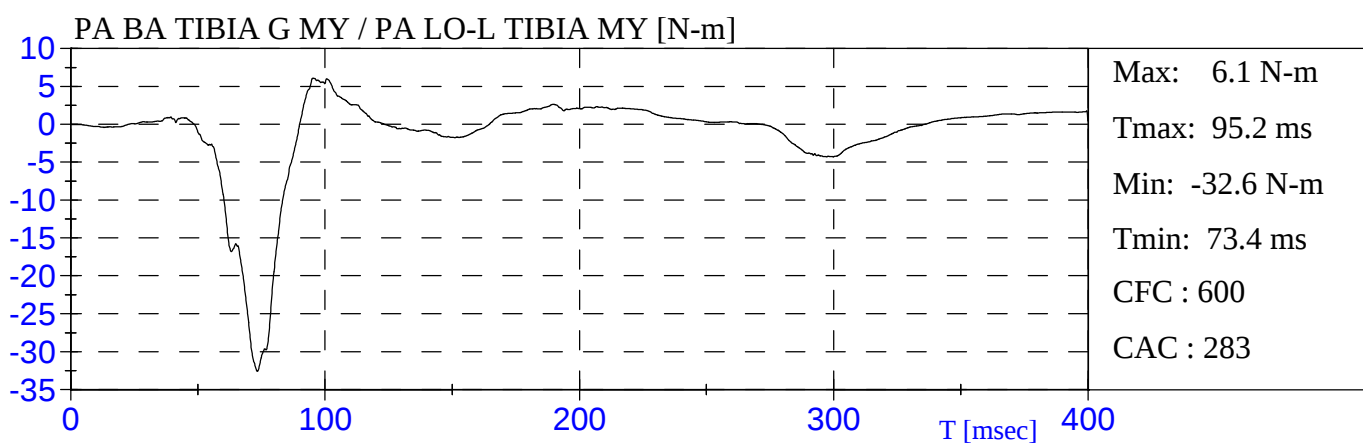
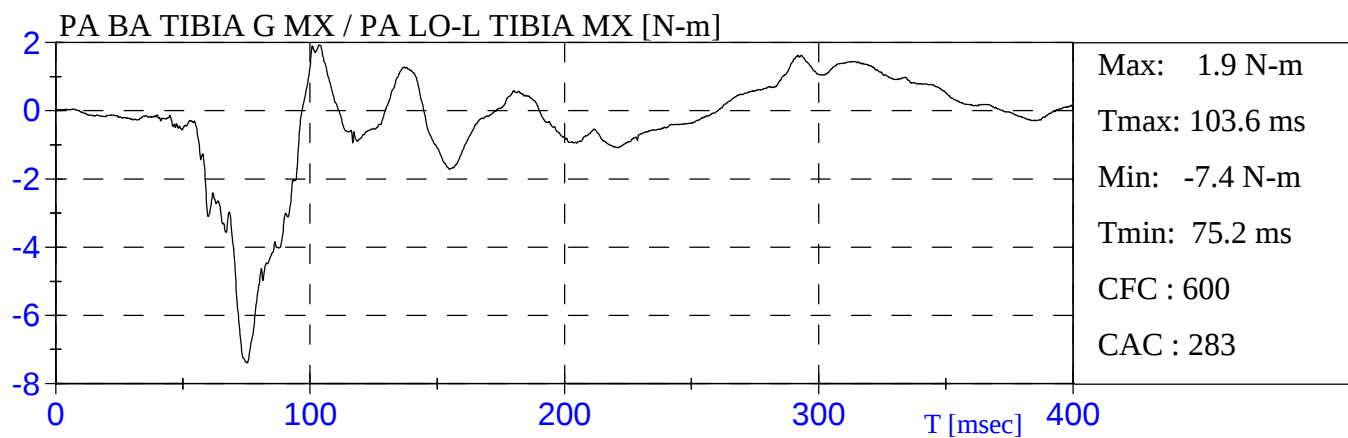


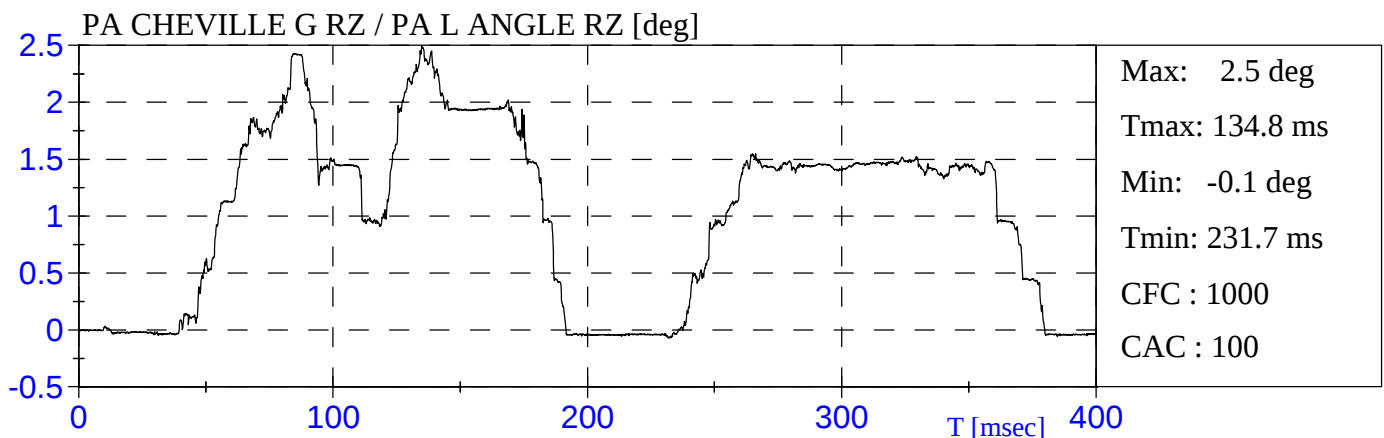
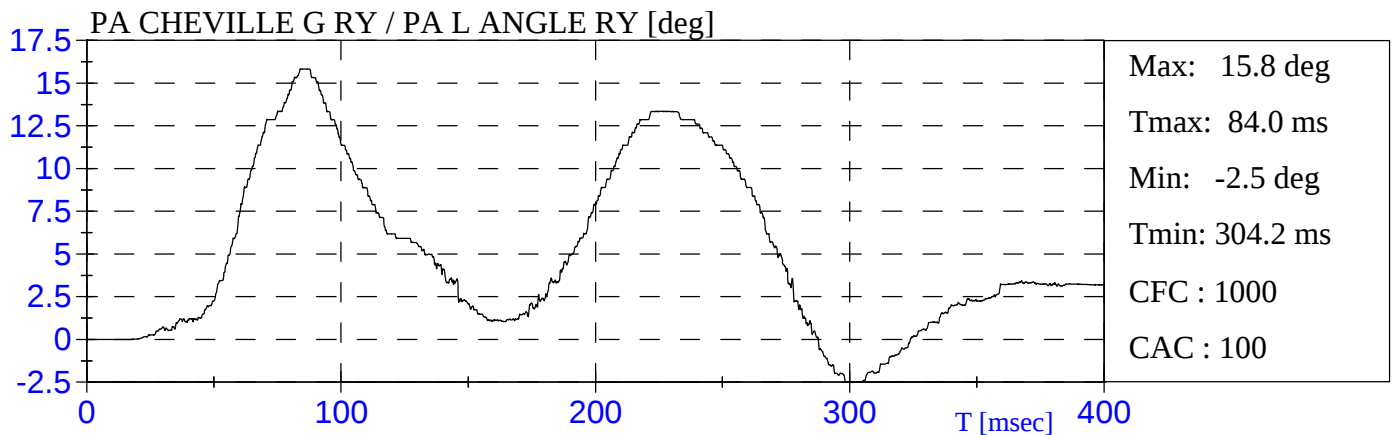
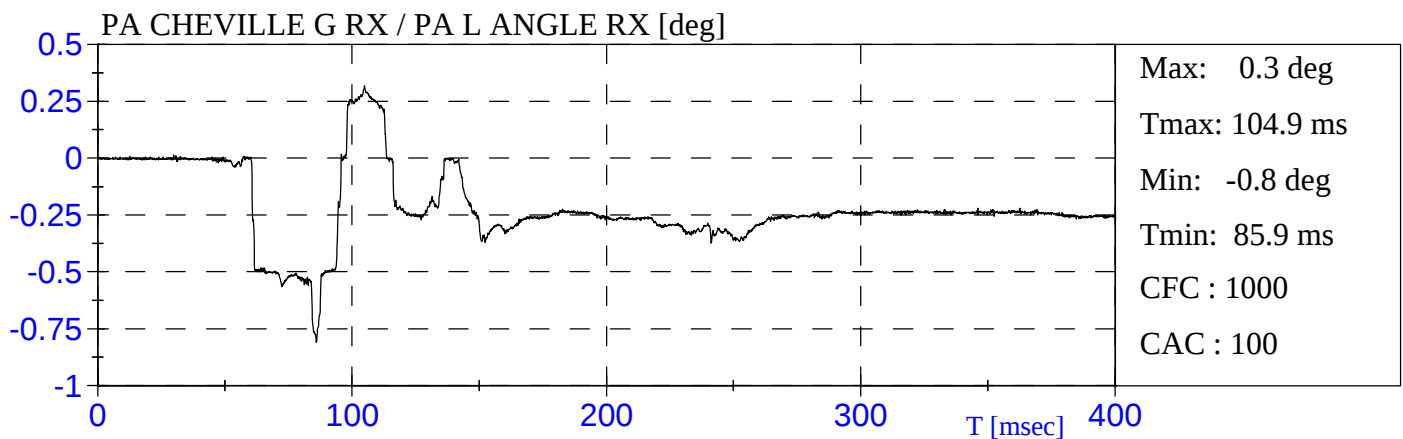
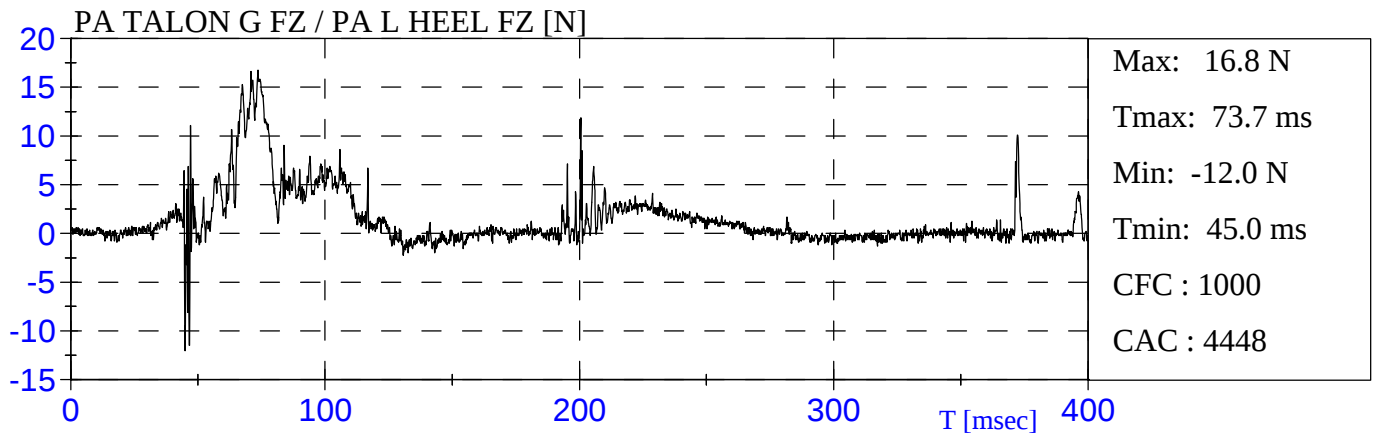


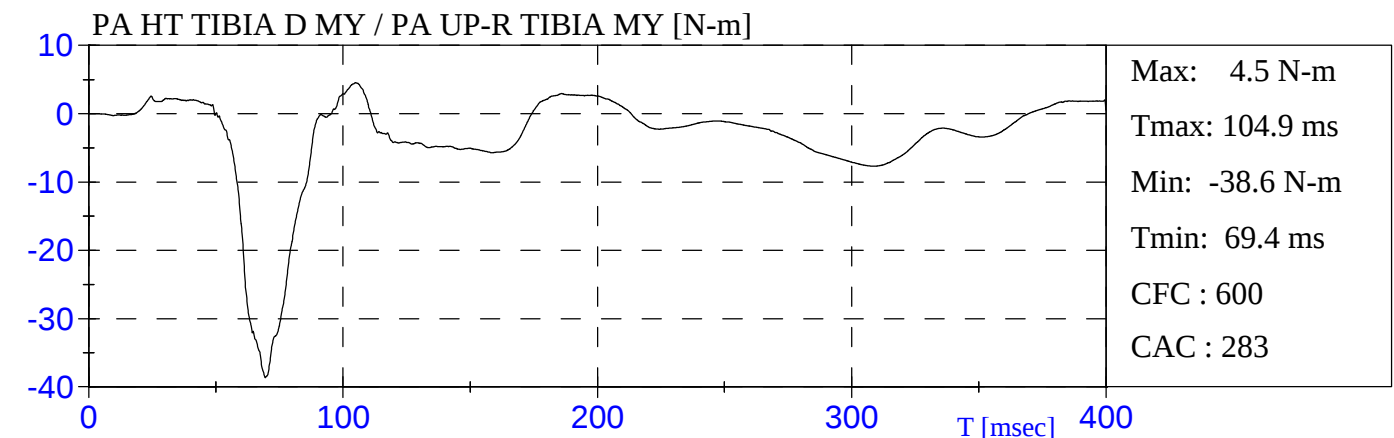
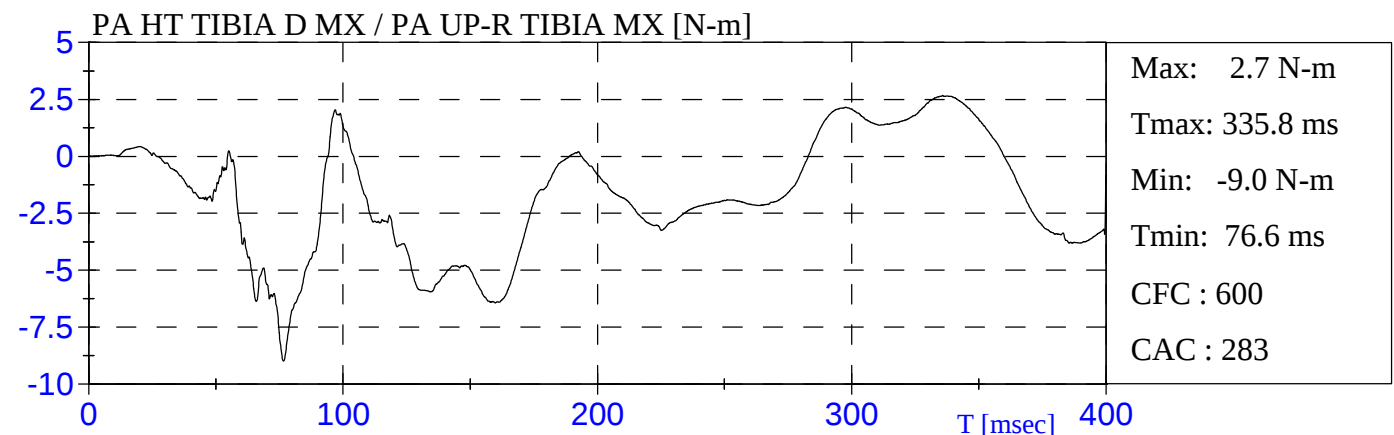
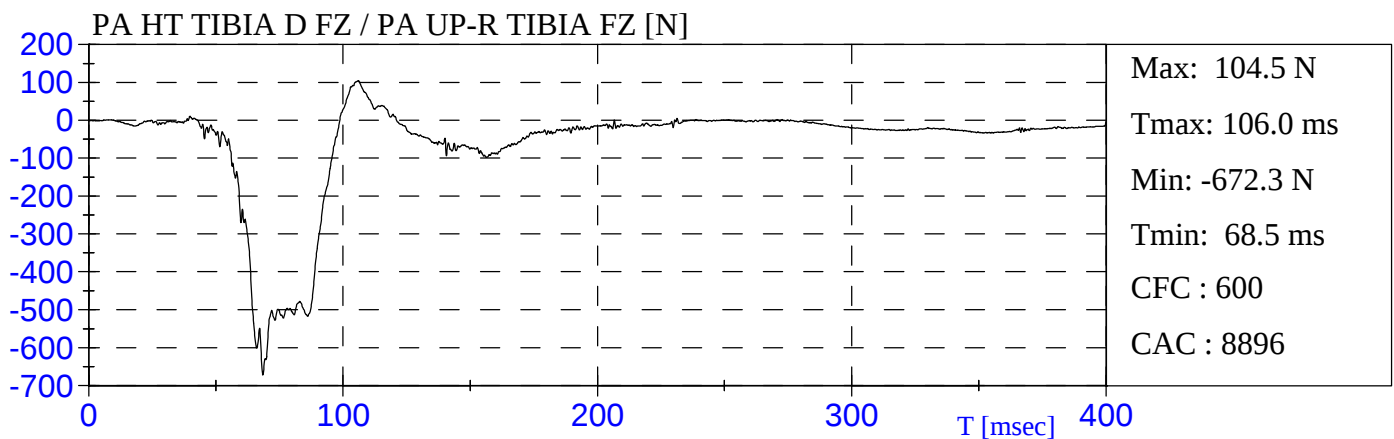
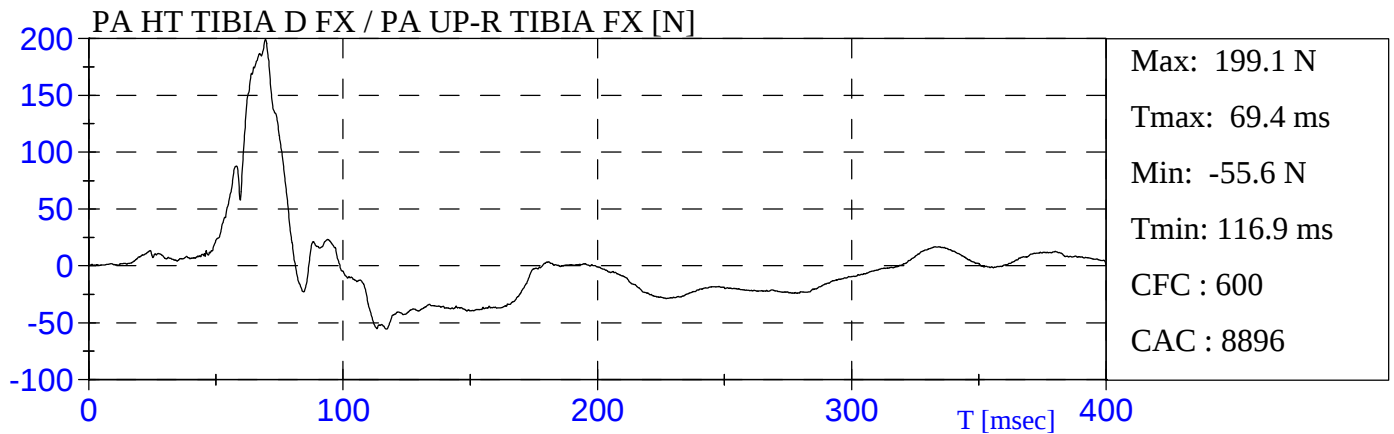


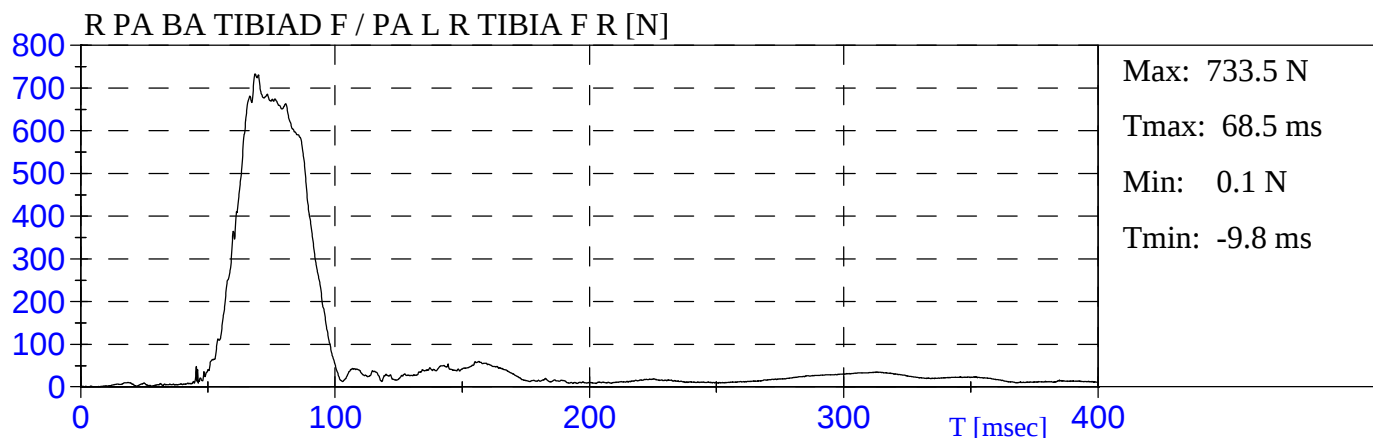
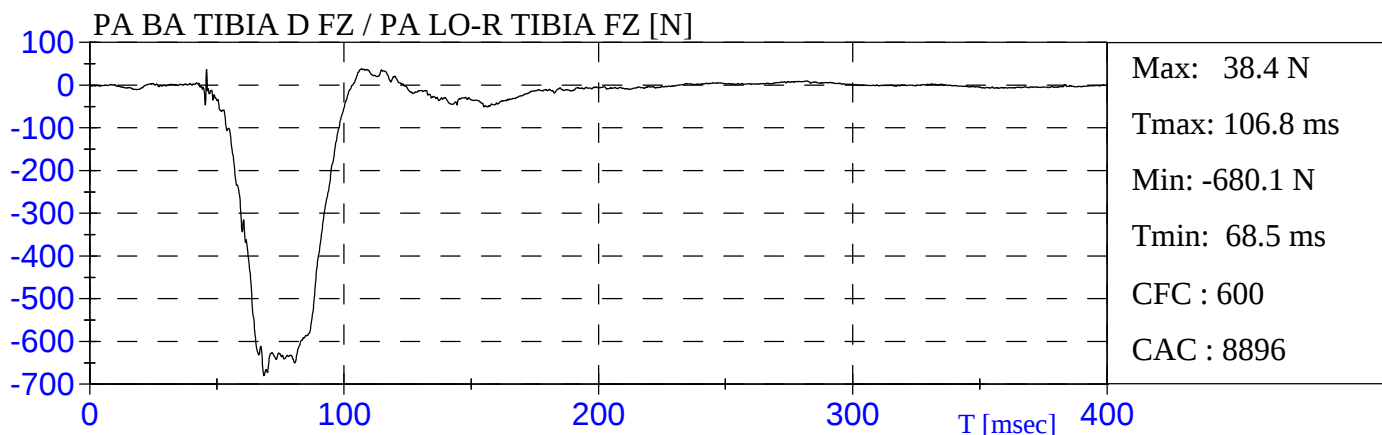
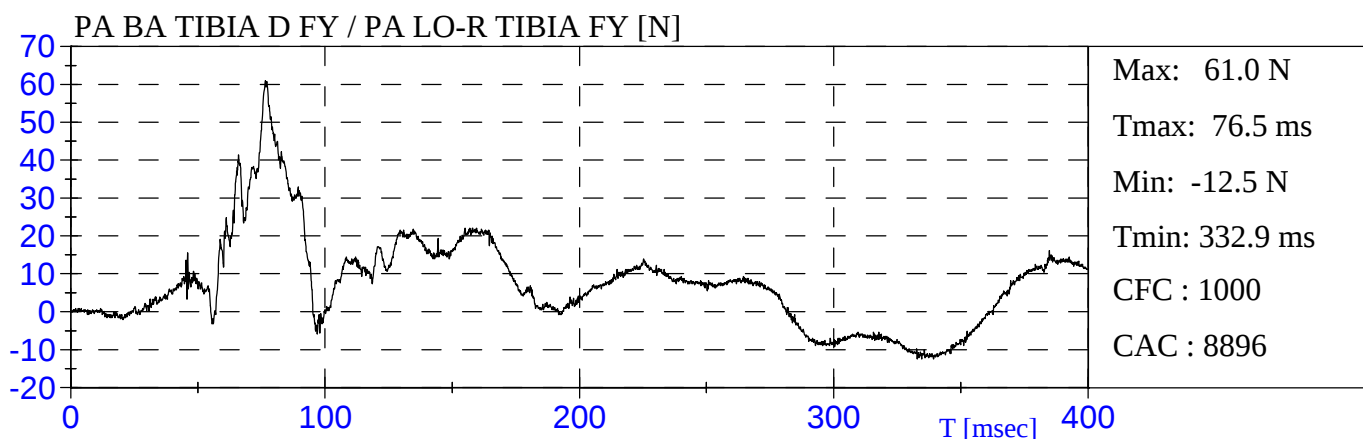
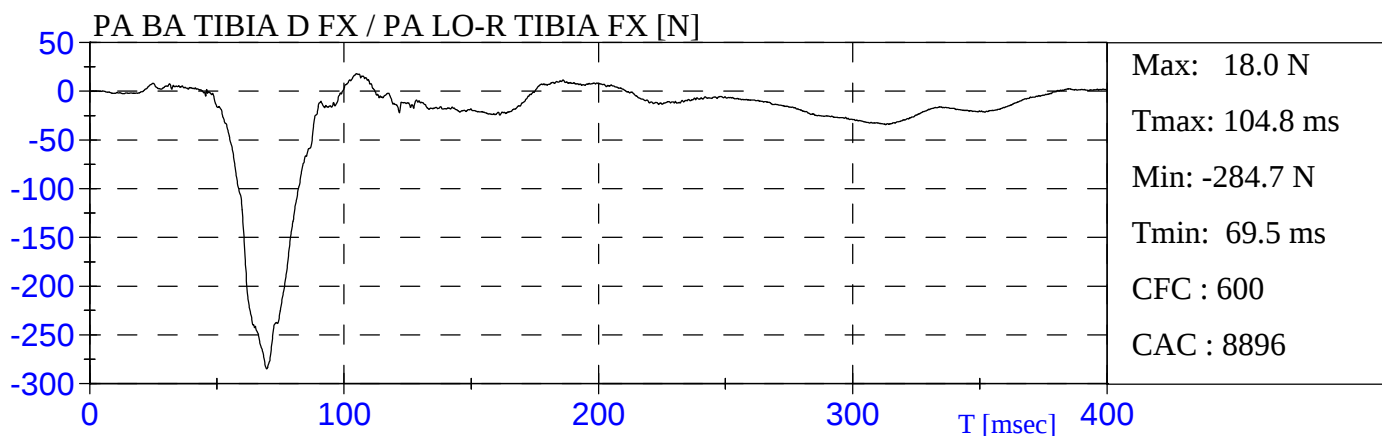


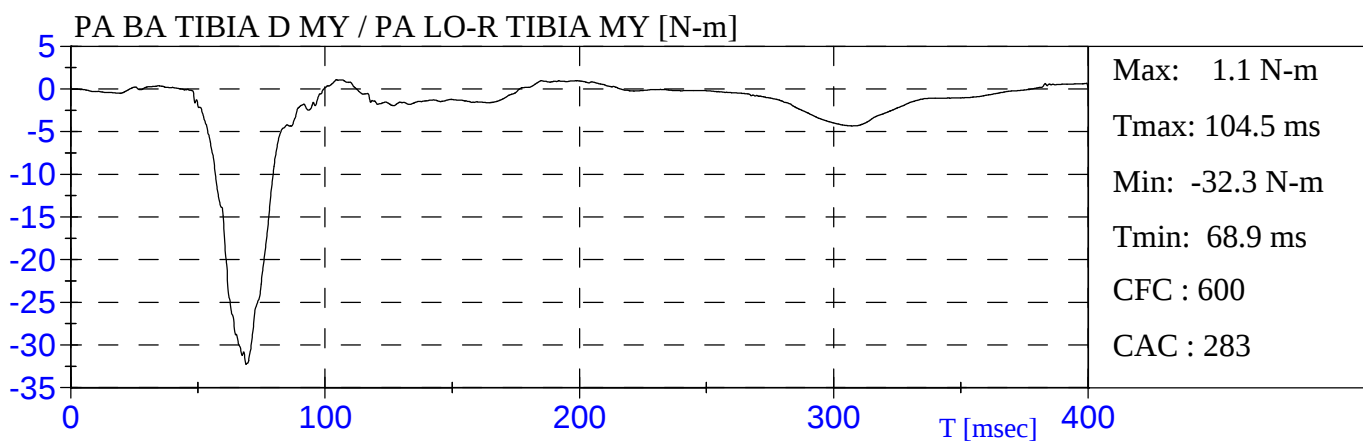
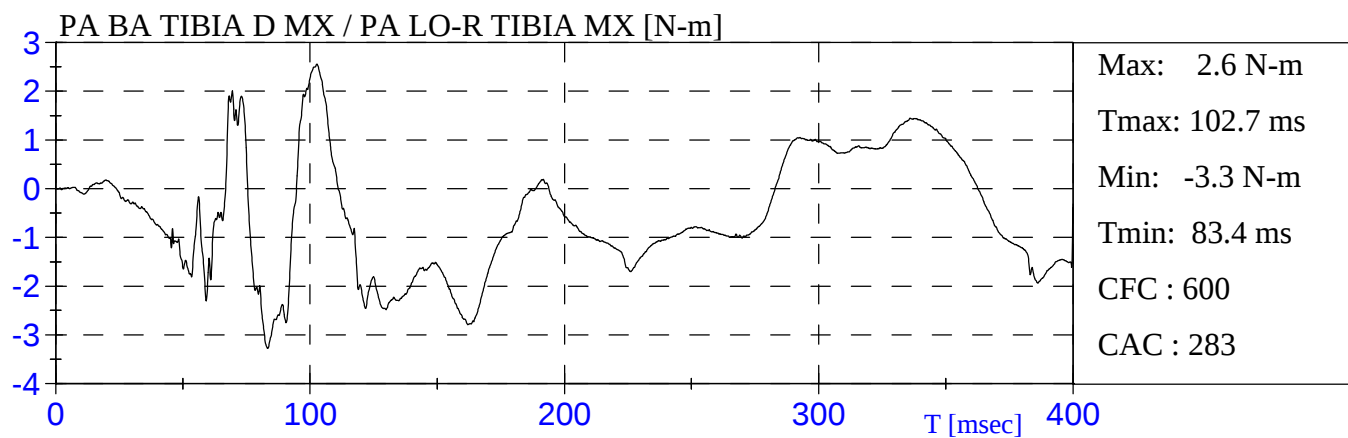


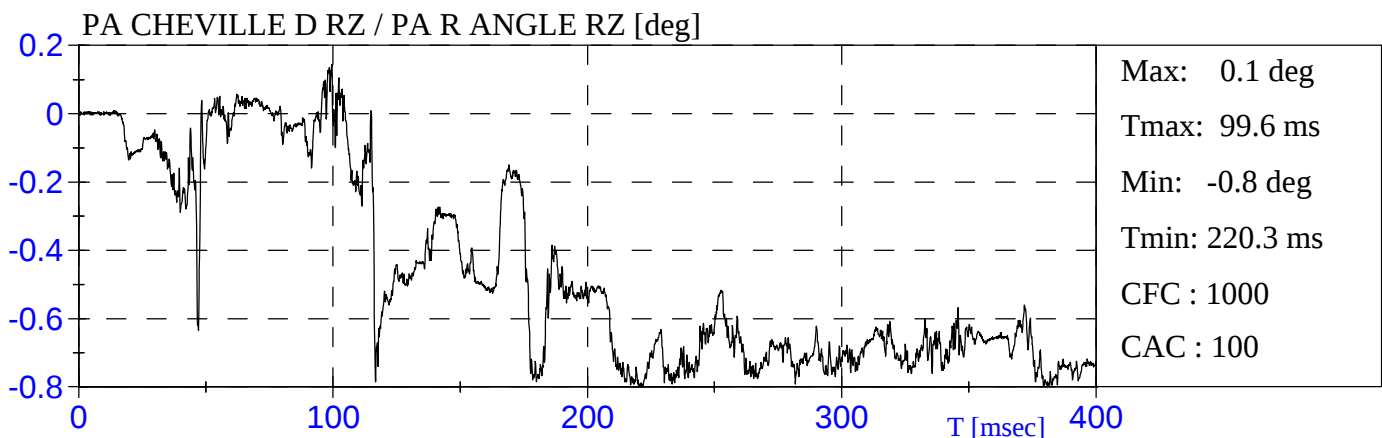
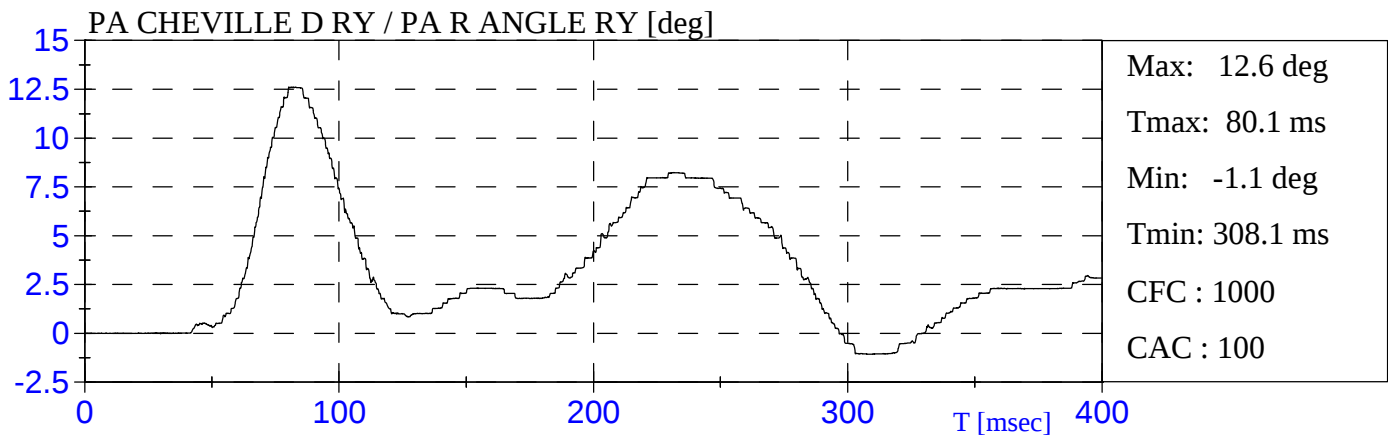
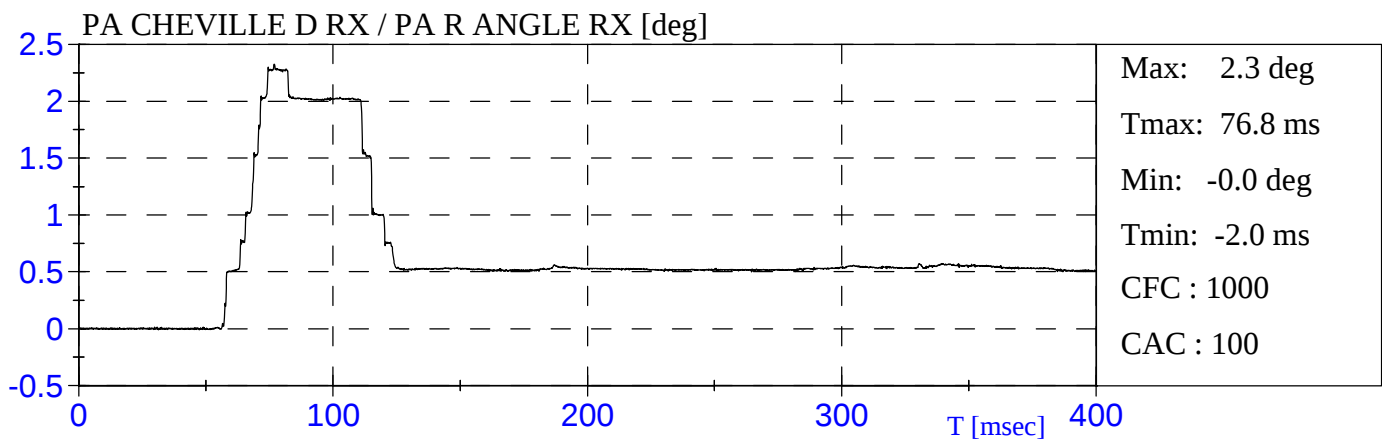
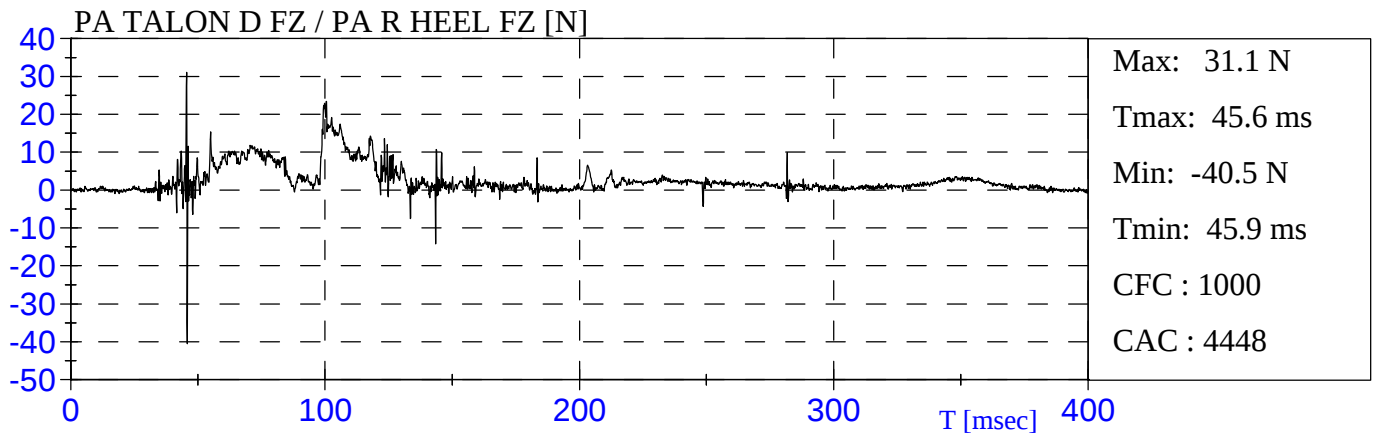


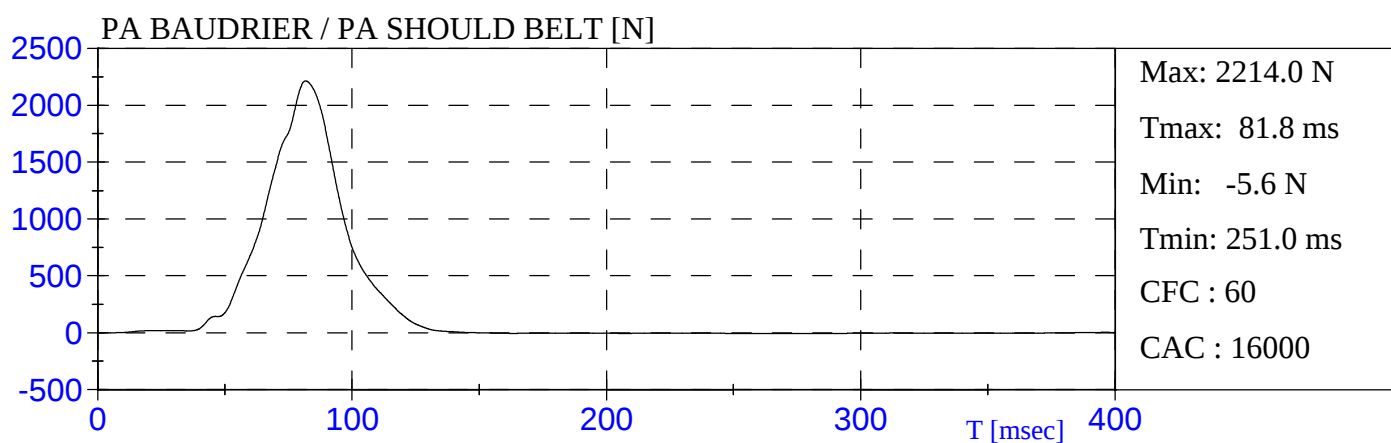
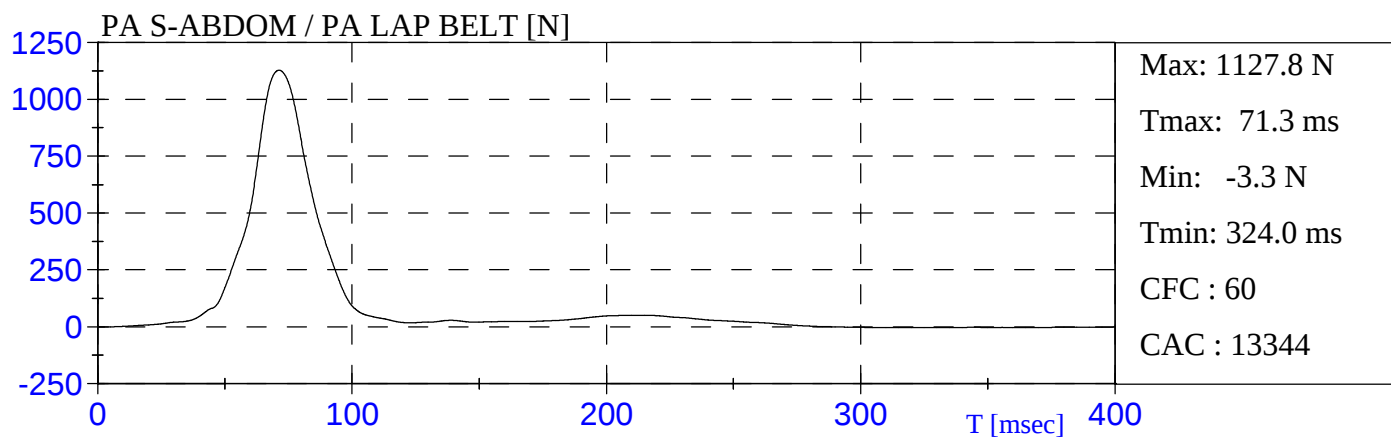


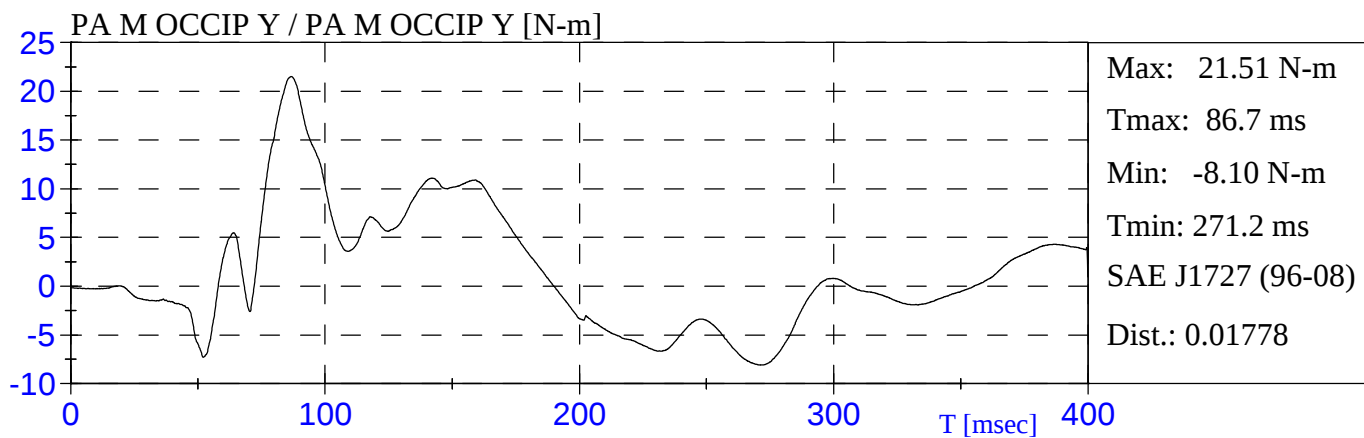


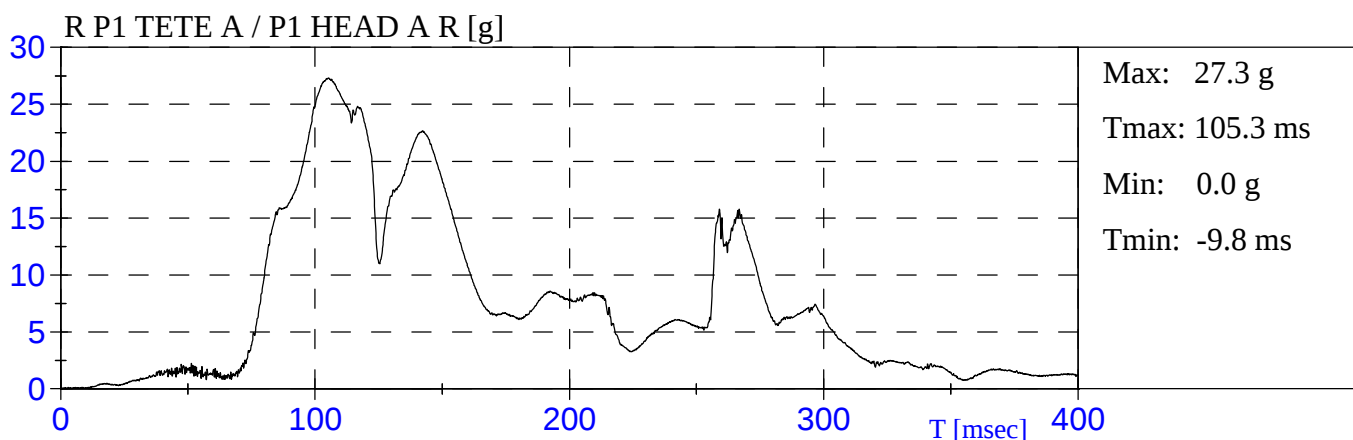
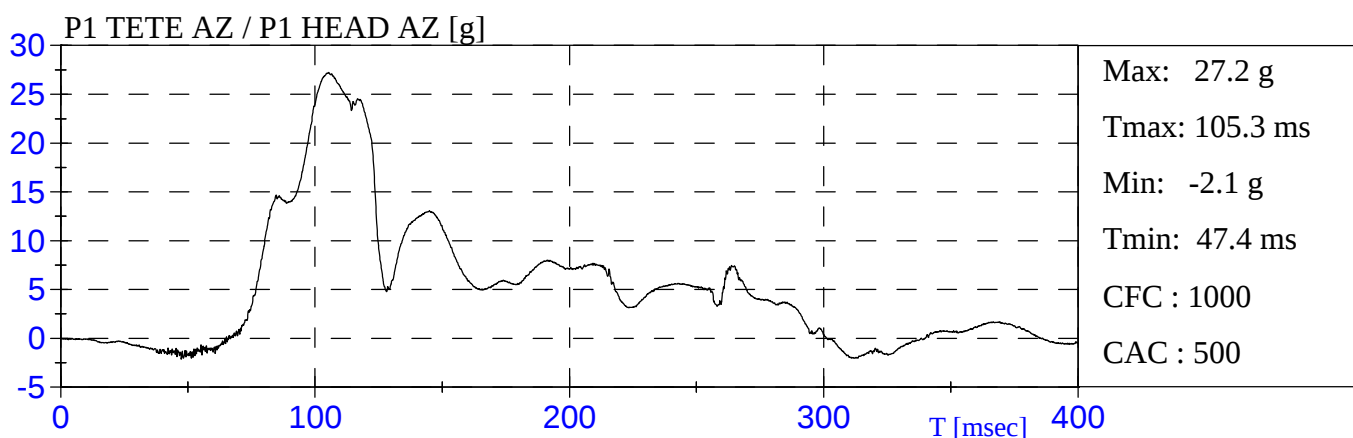
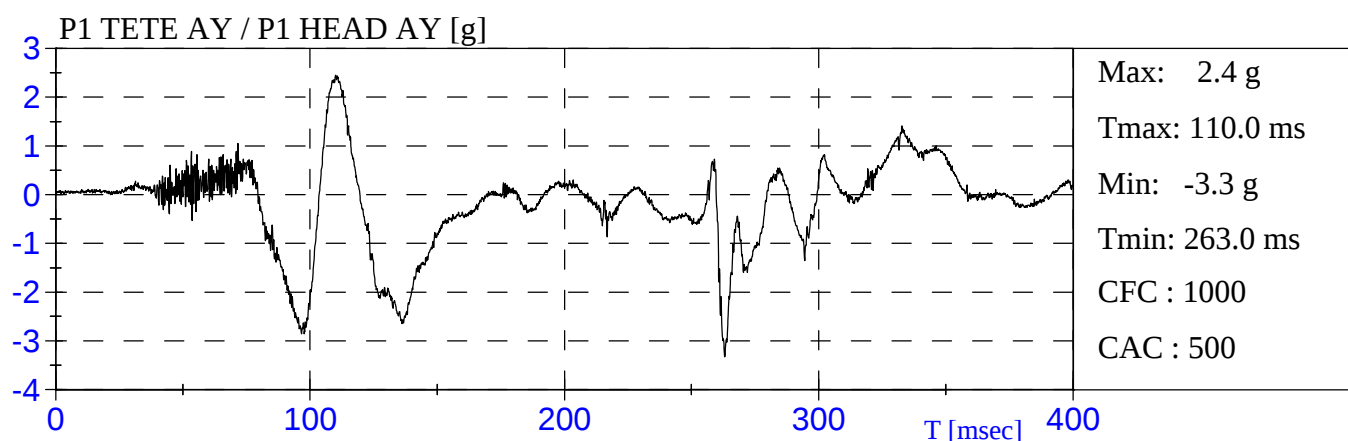
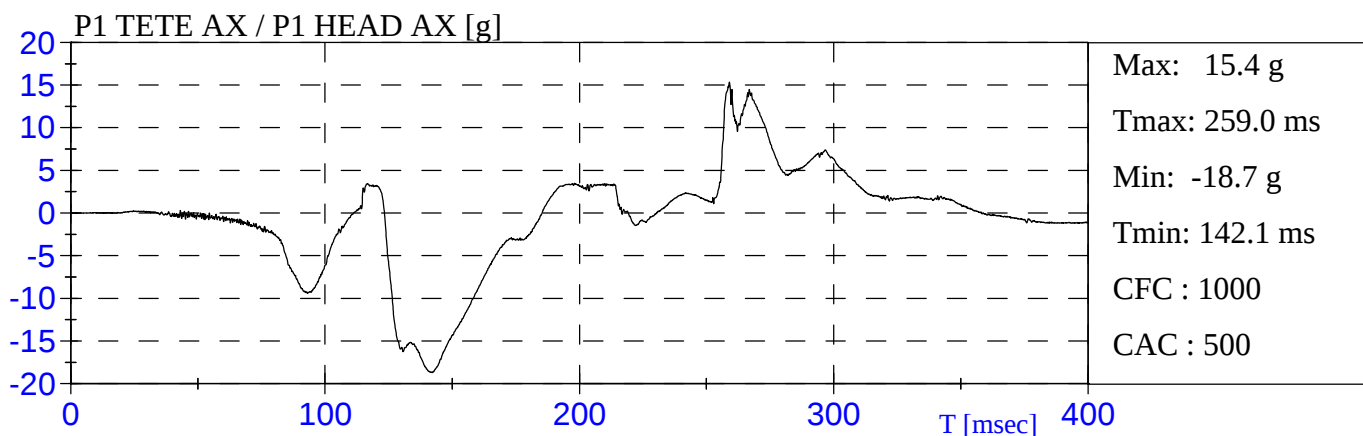


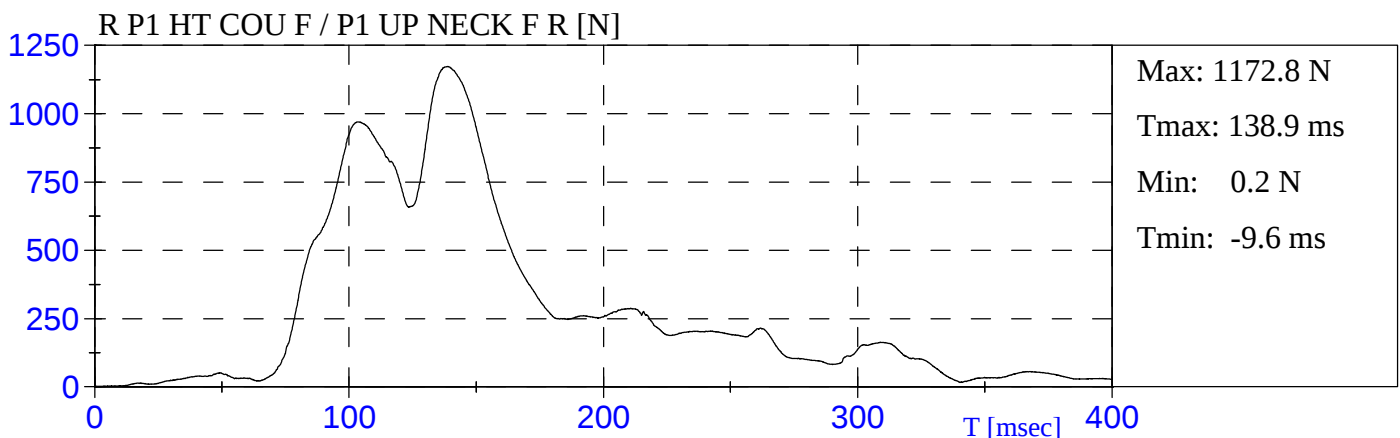
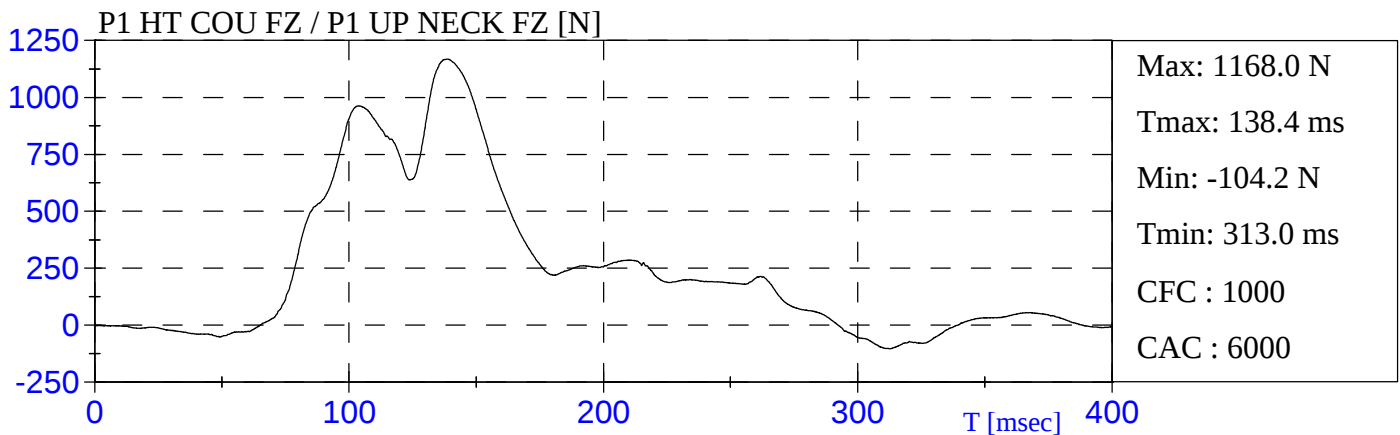
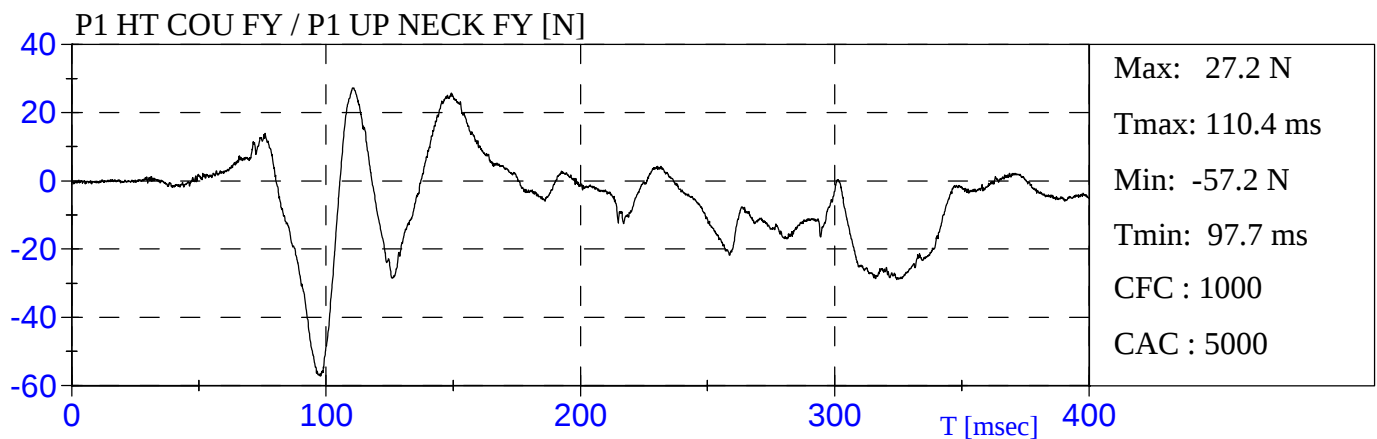
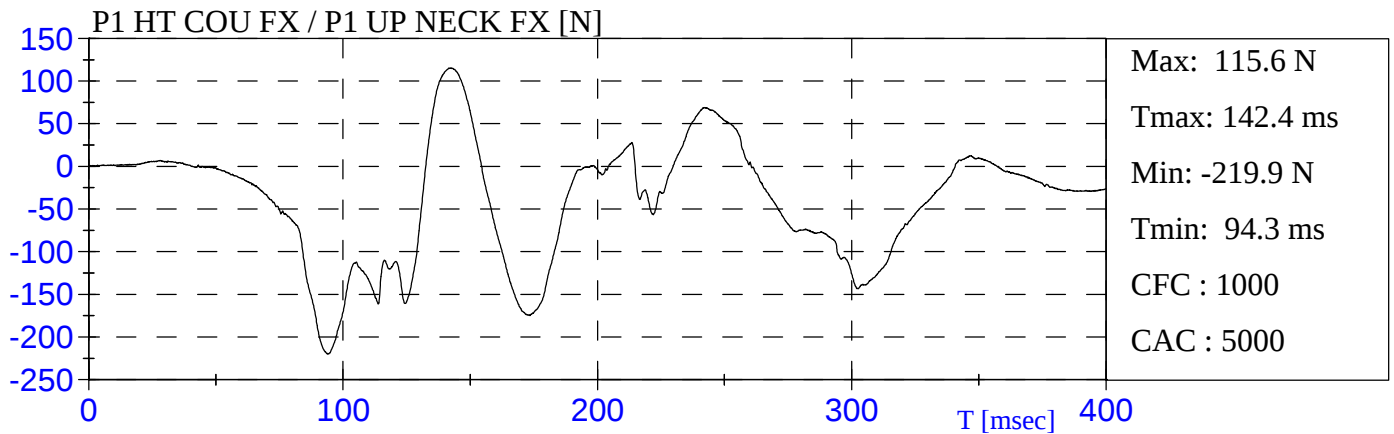


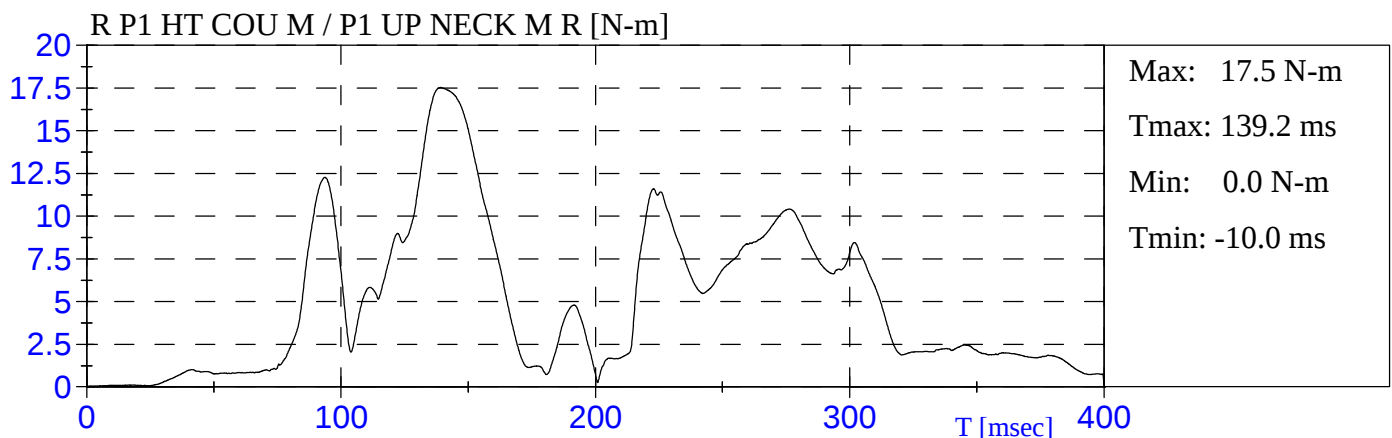
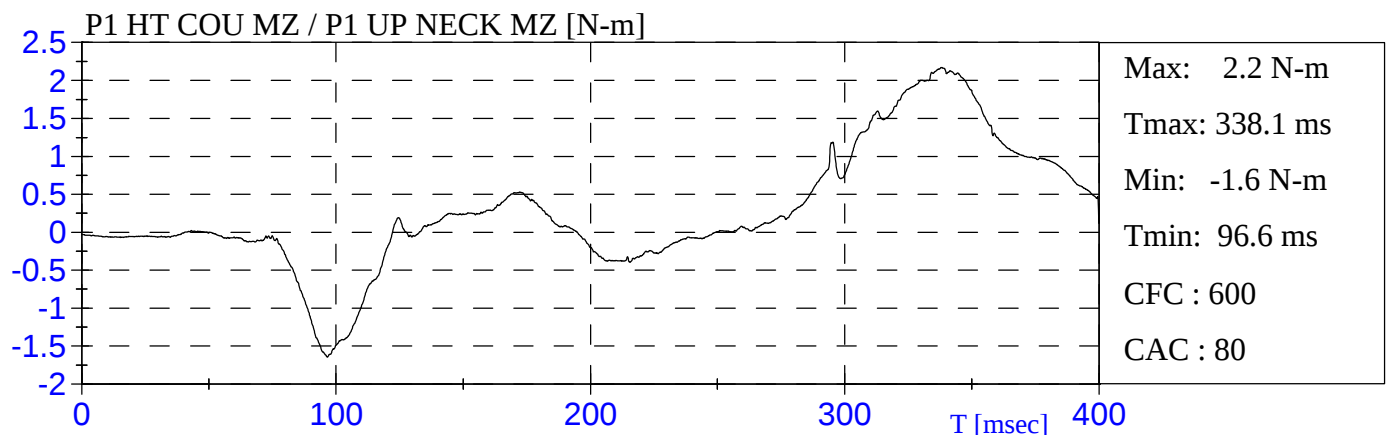
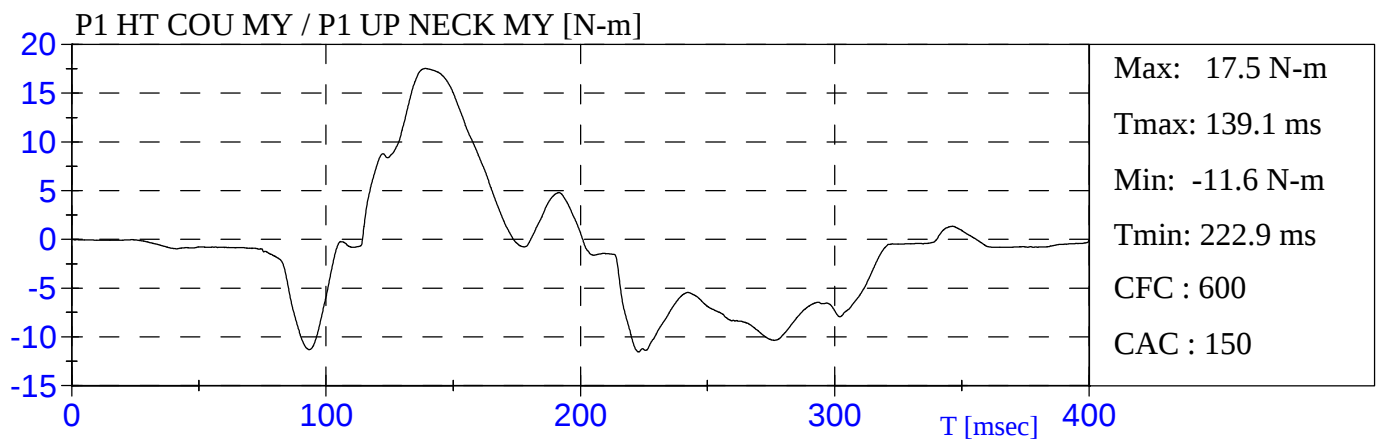
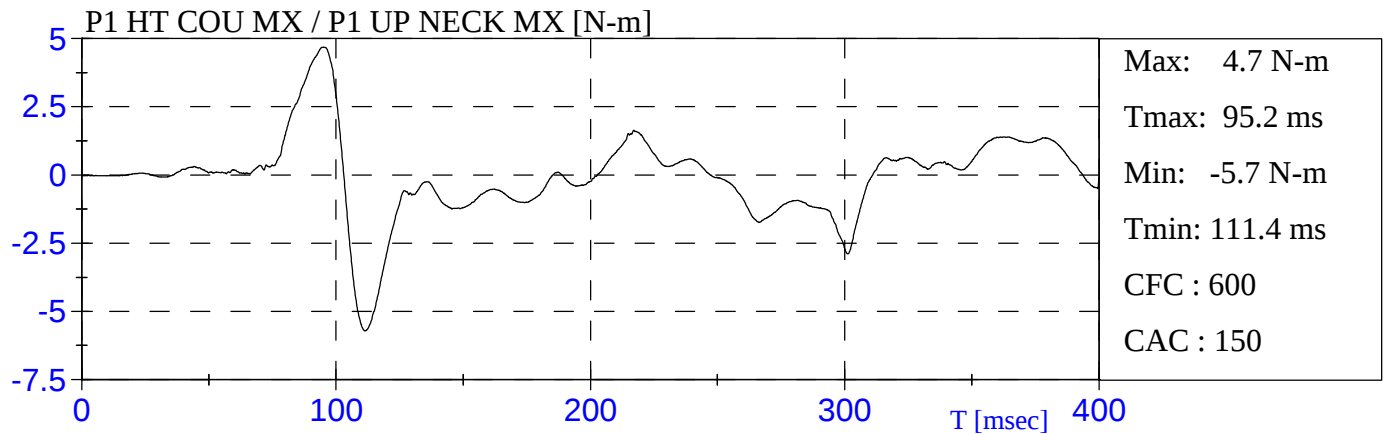


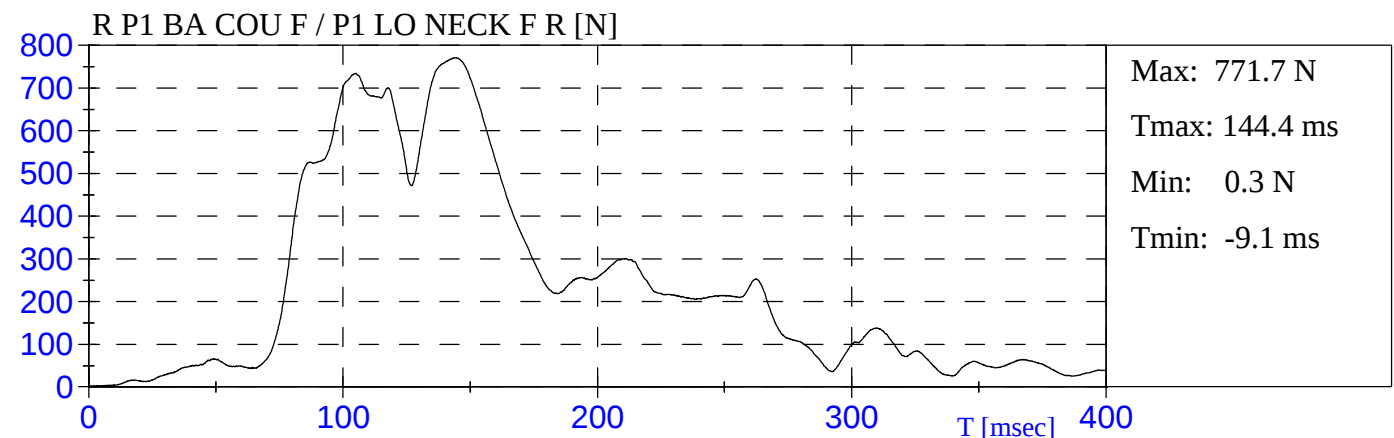
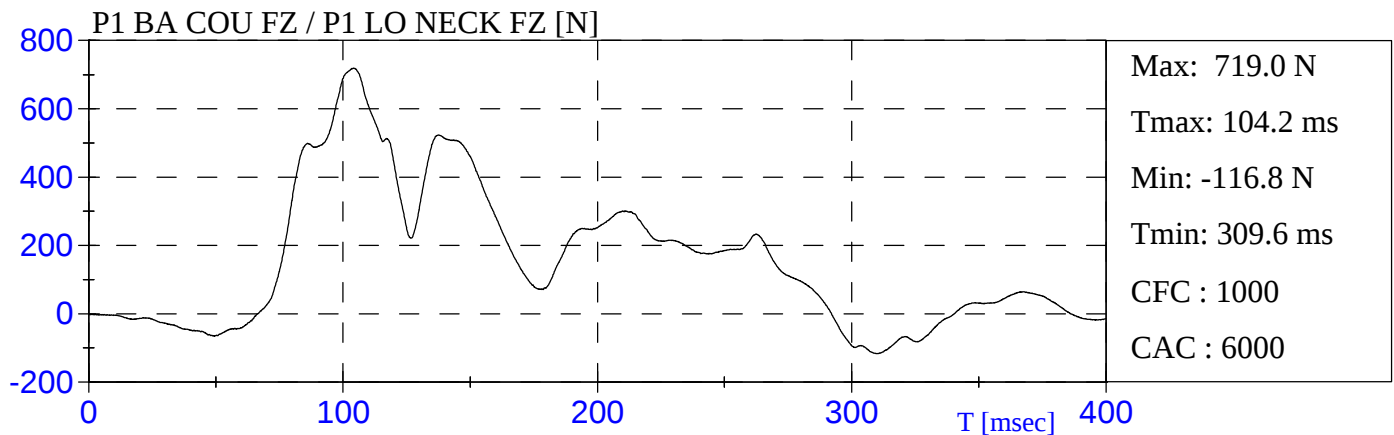
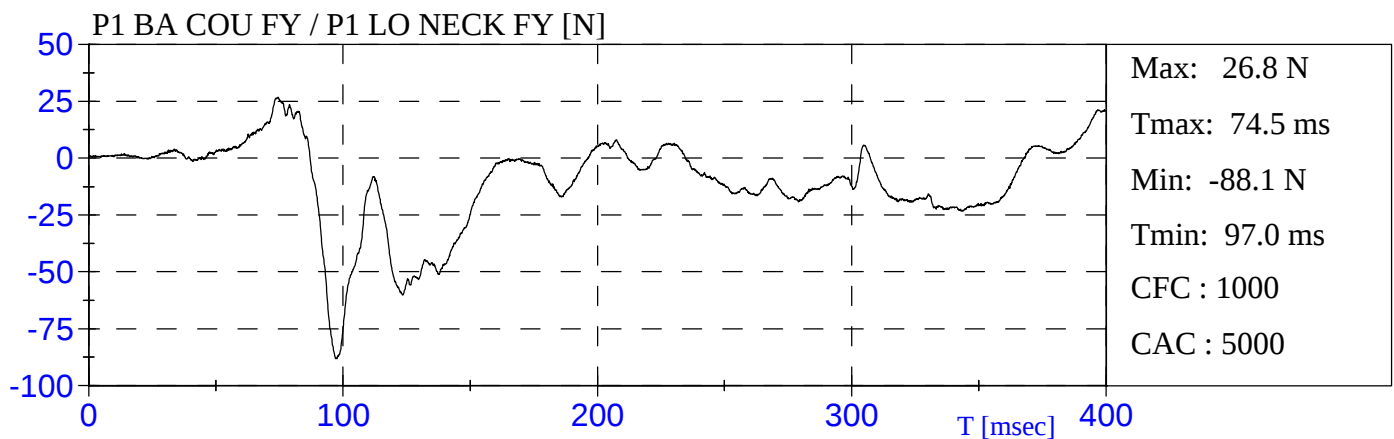
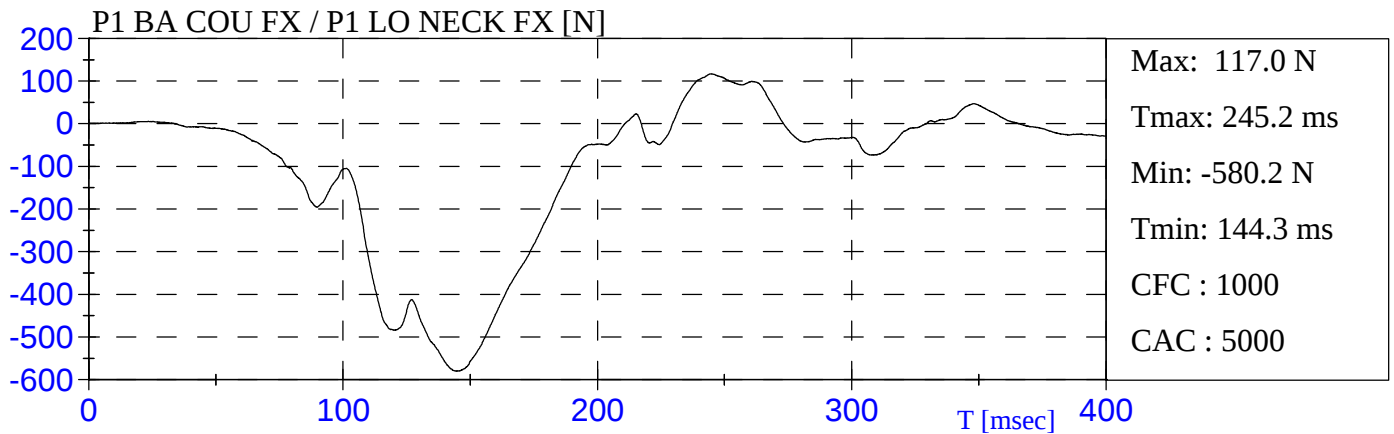


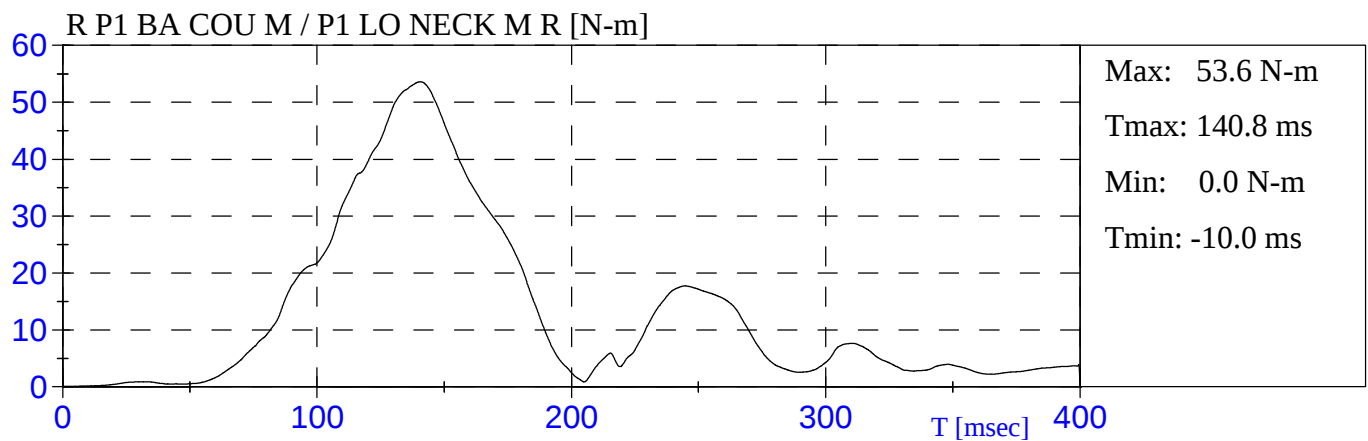
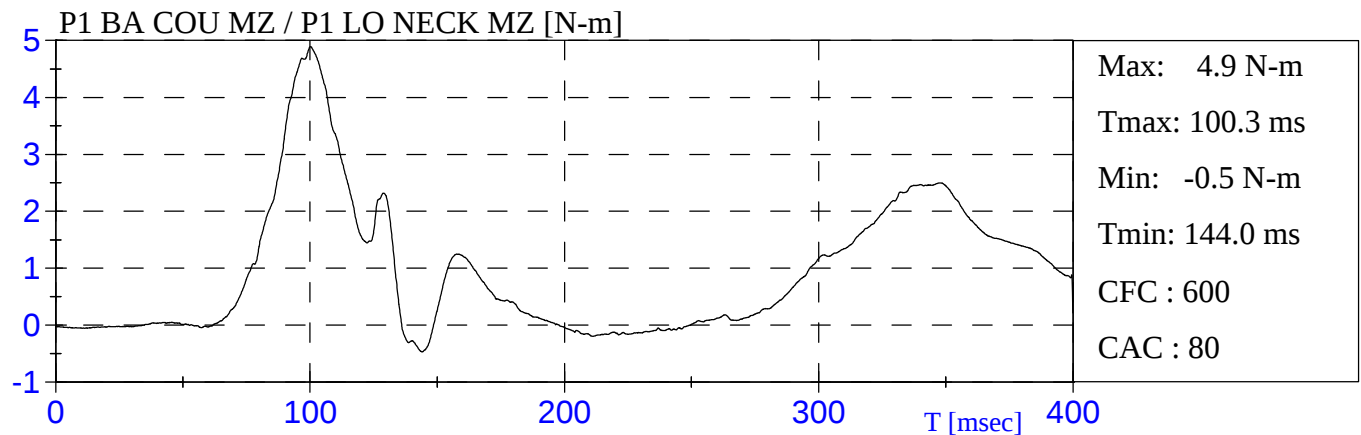
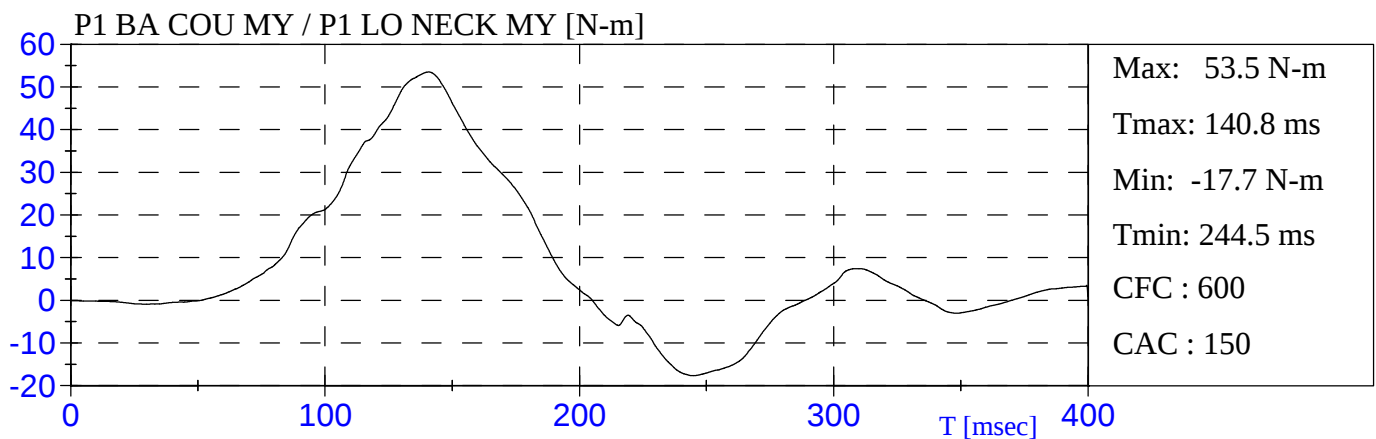
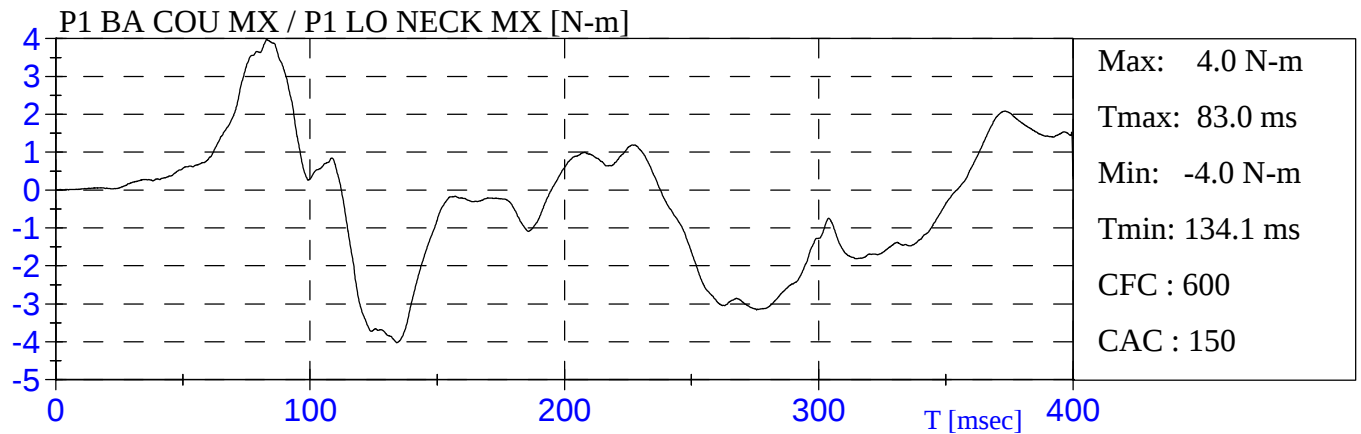


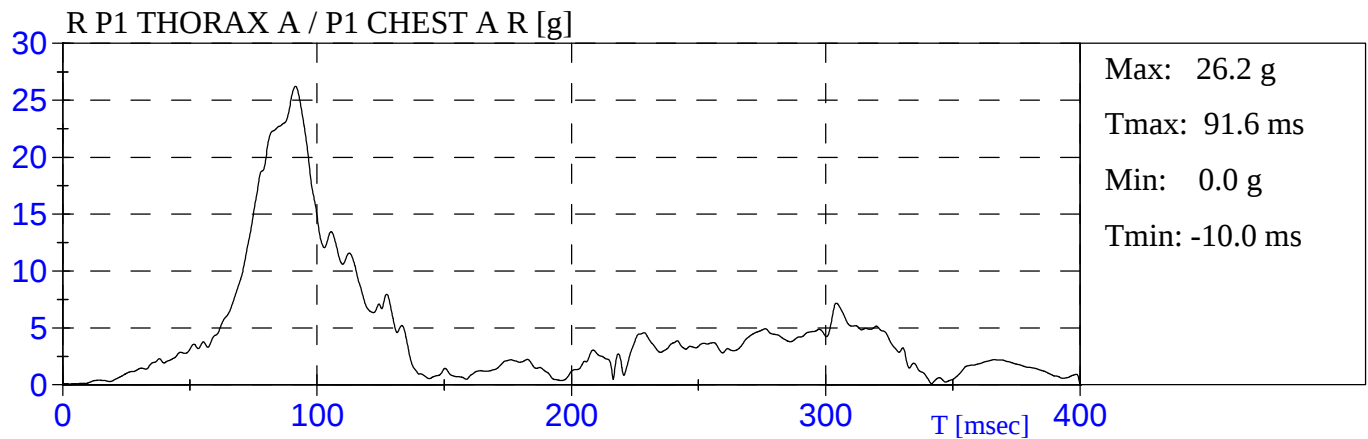
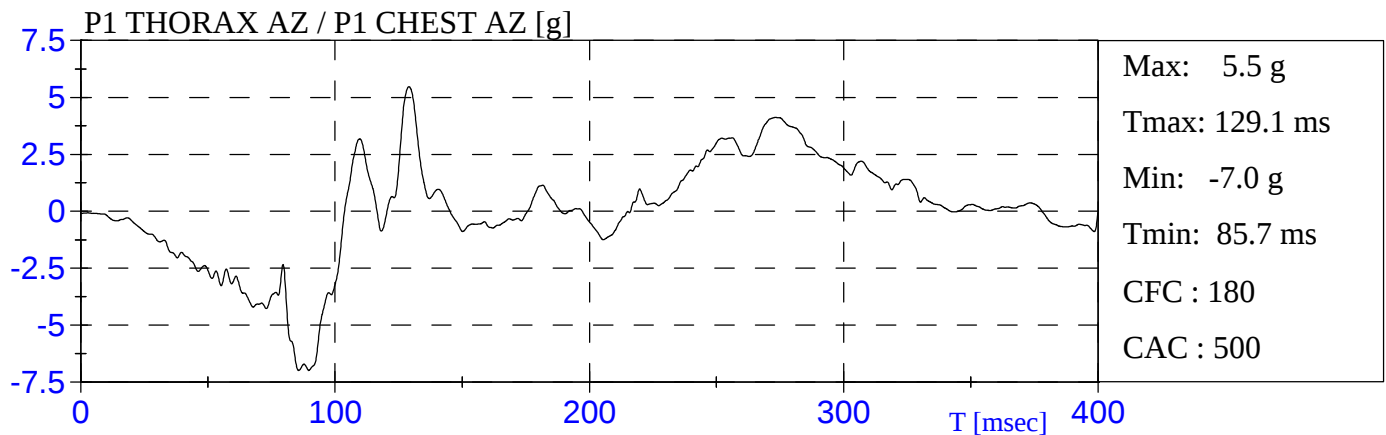
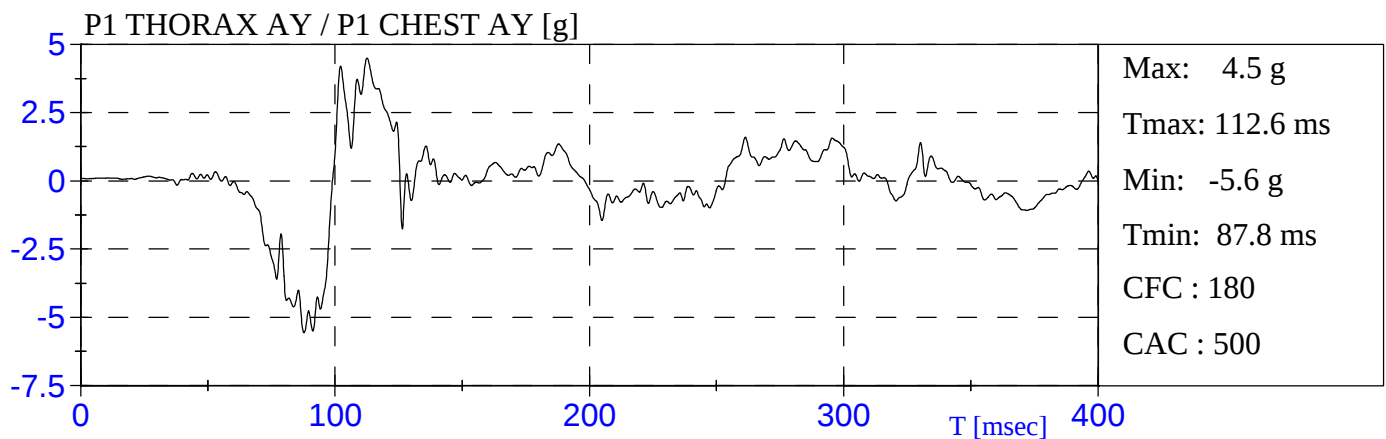
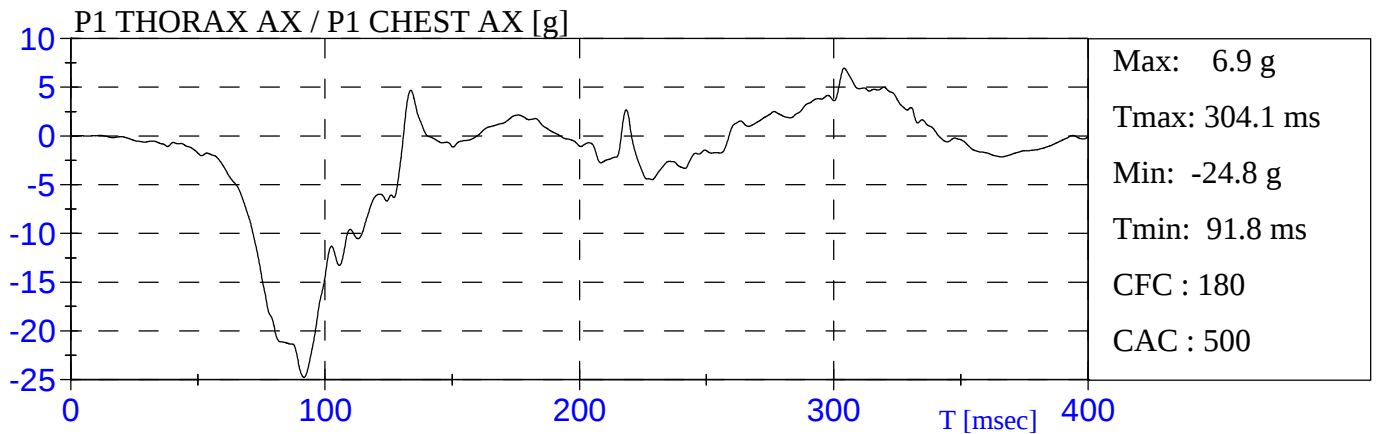


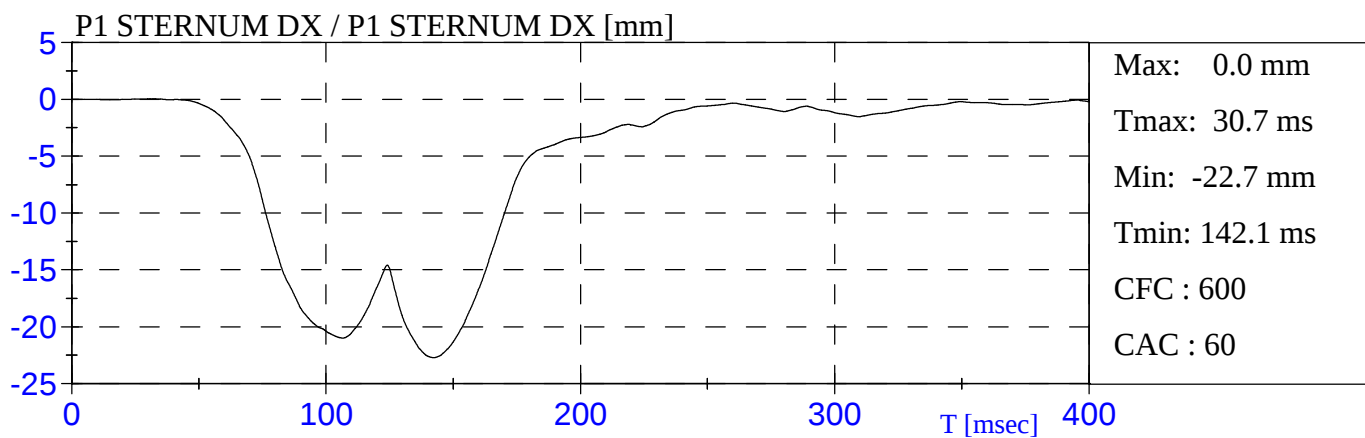








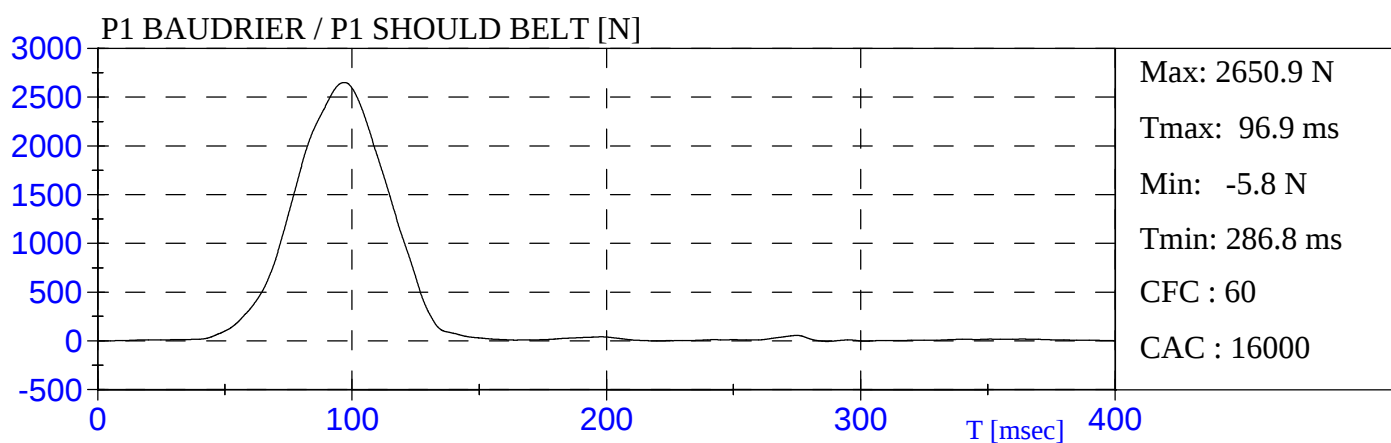
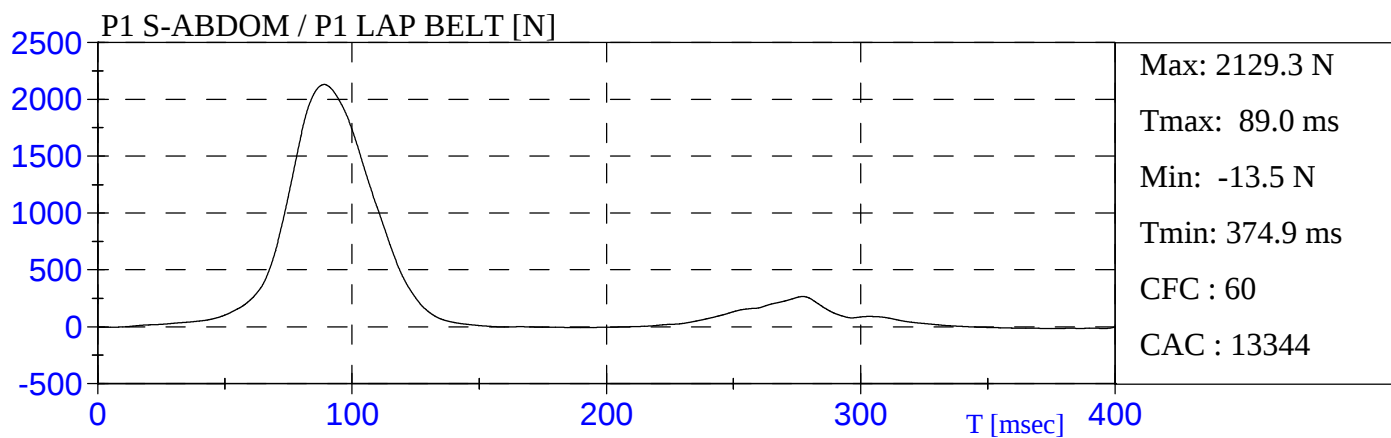


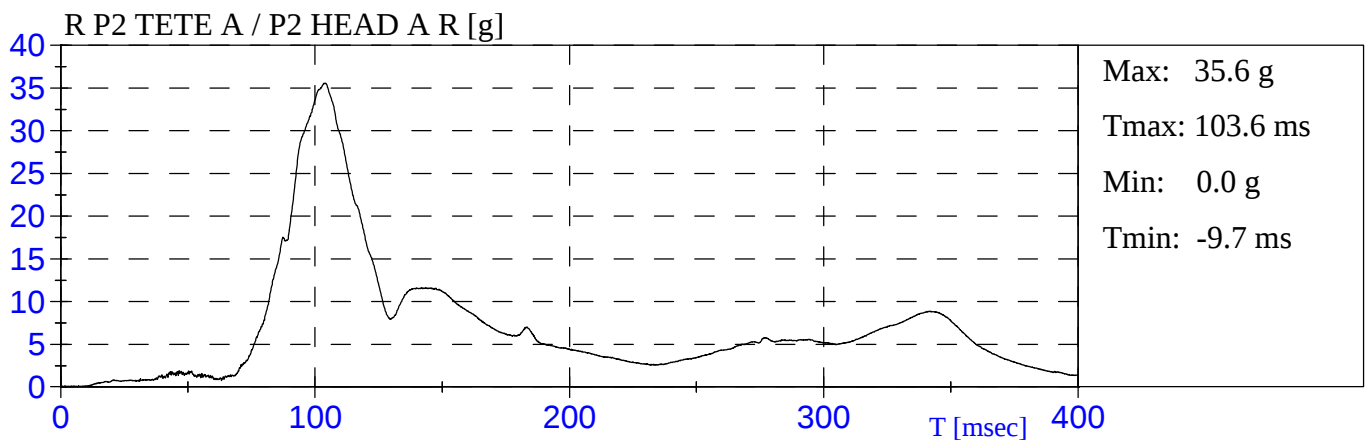
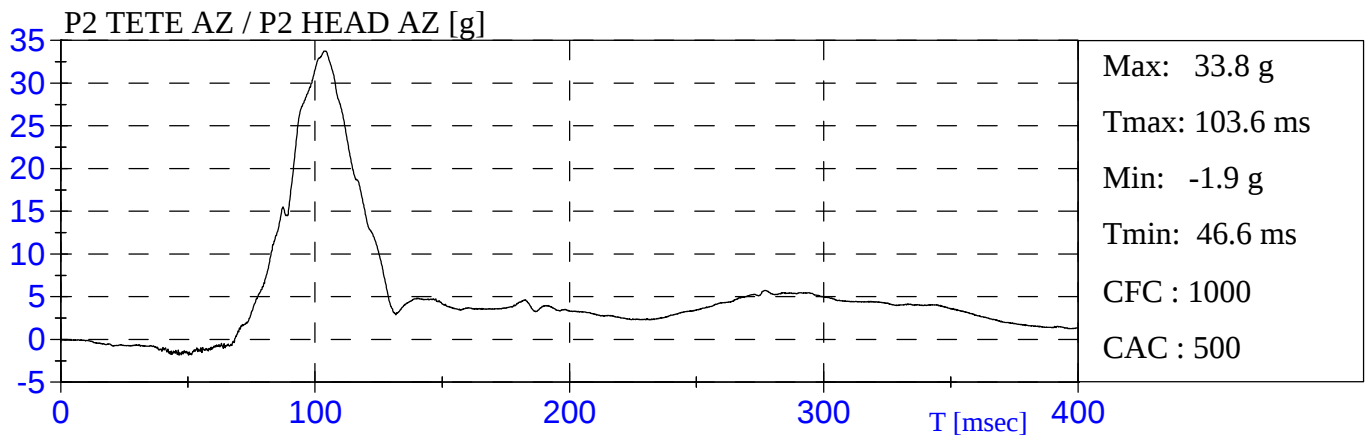
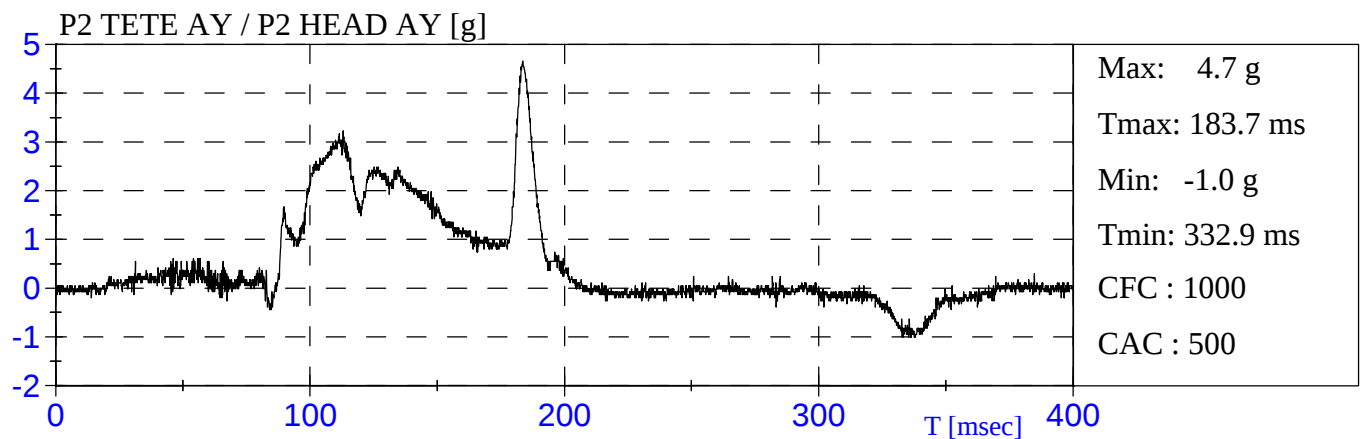
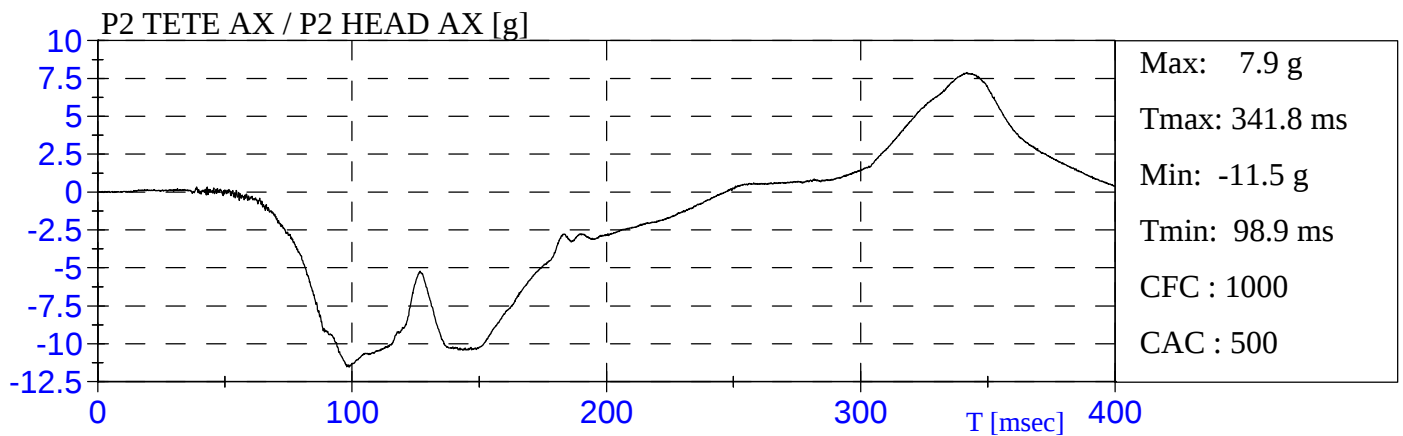




COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05
N° TC / TC No.: TC03-233

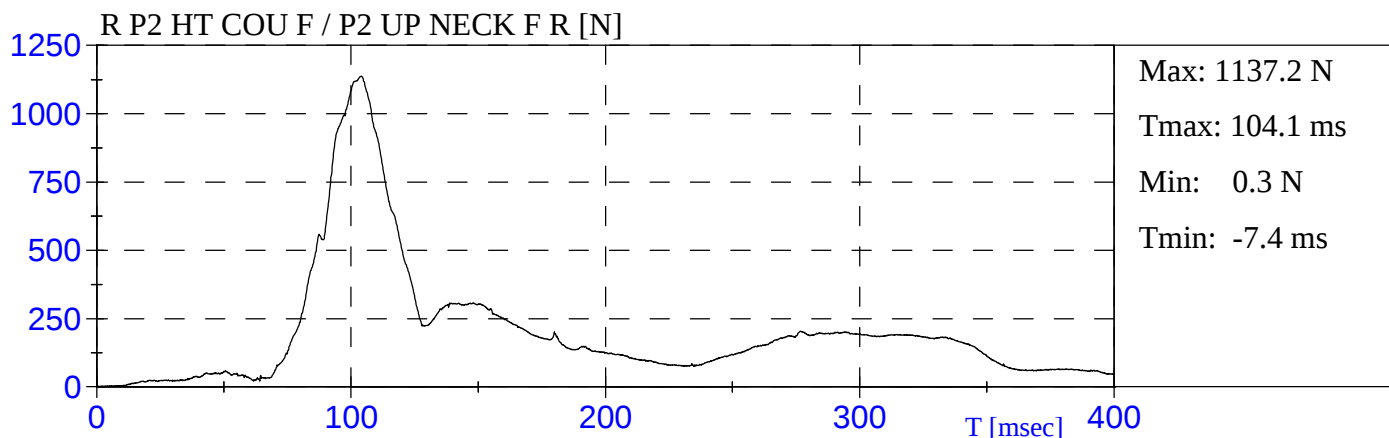
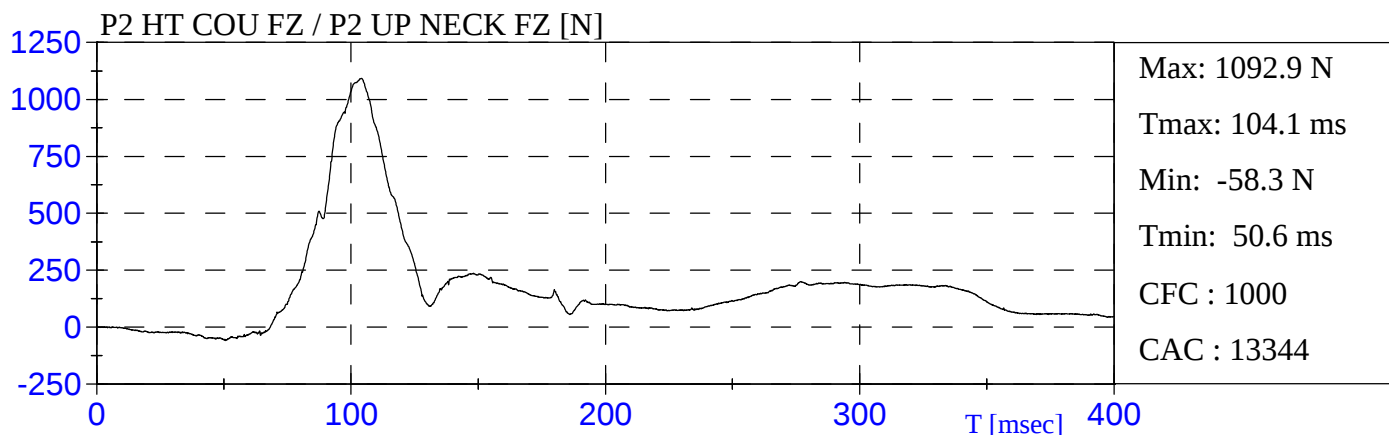
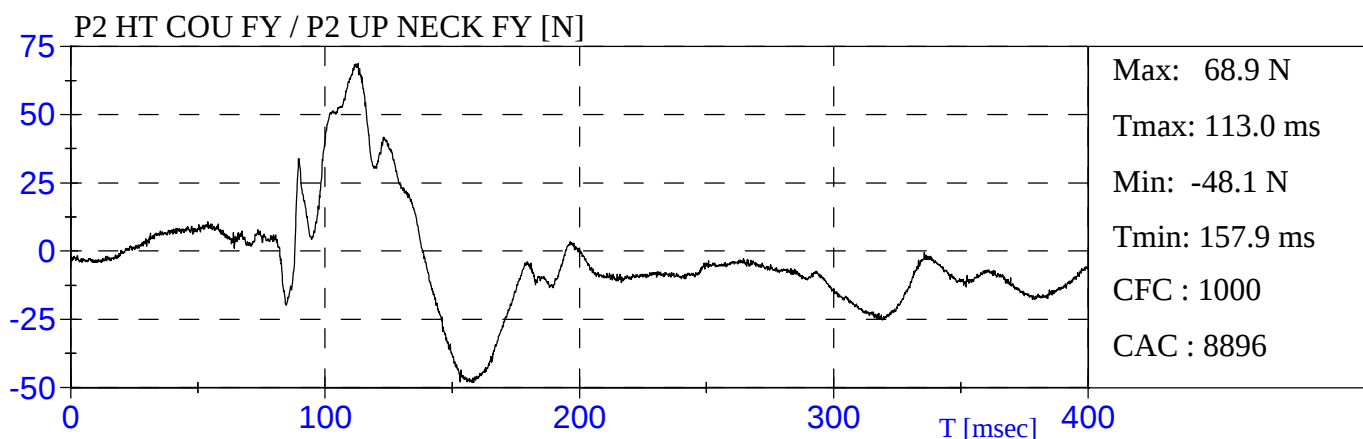
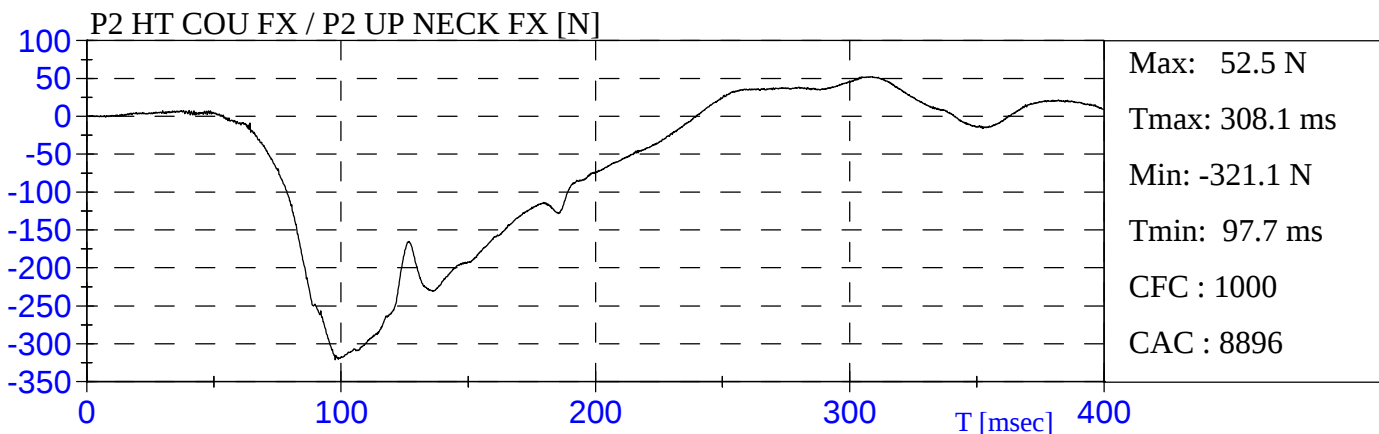


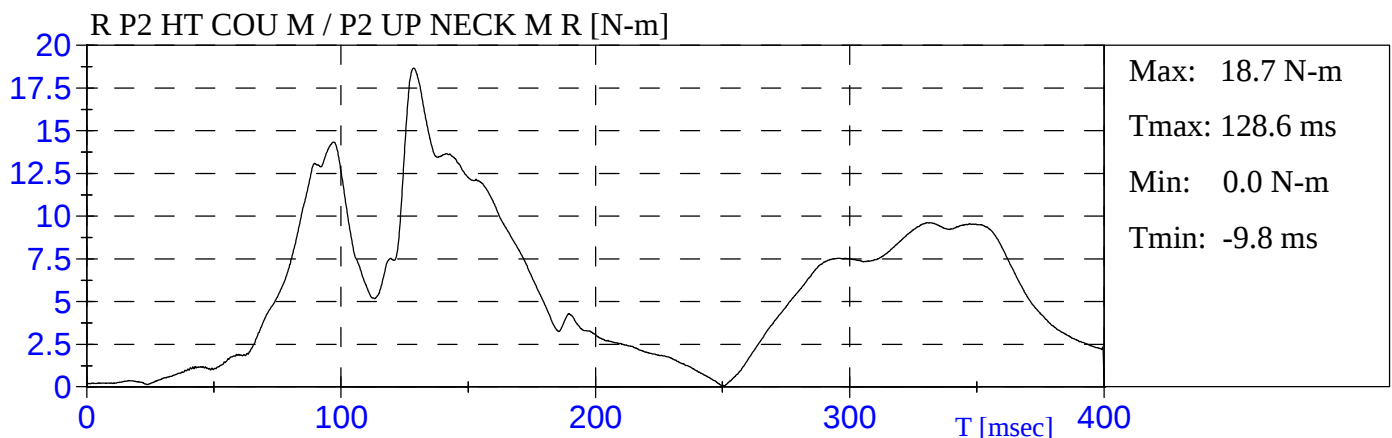
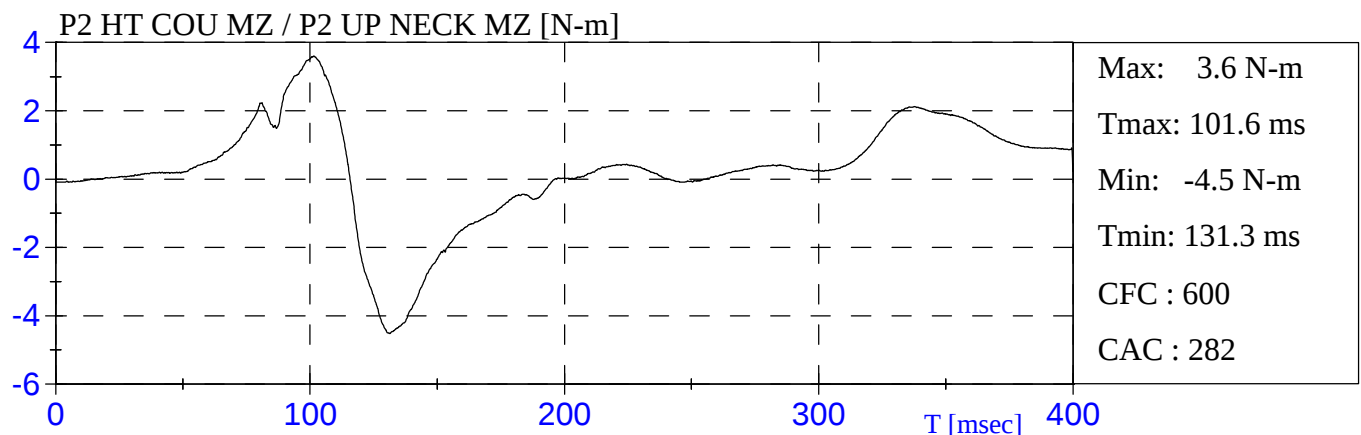
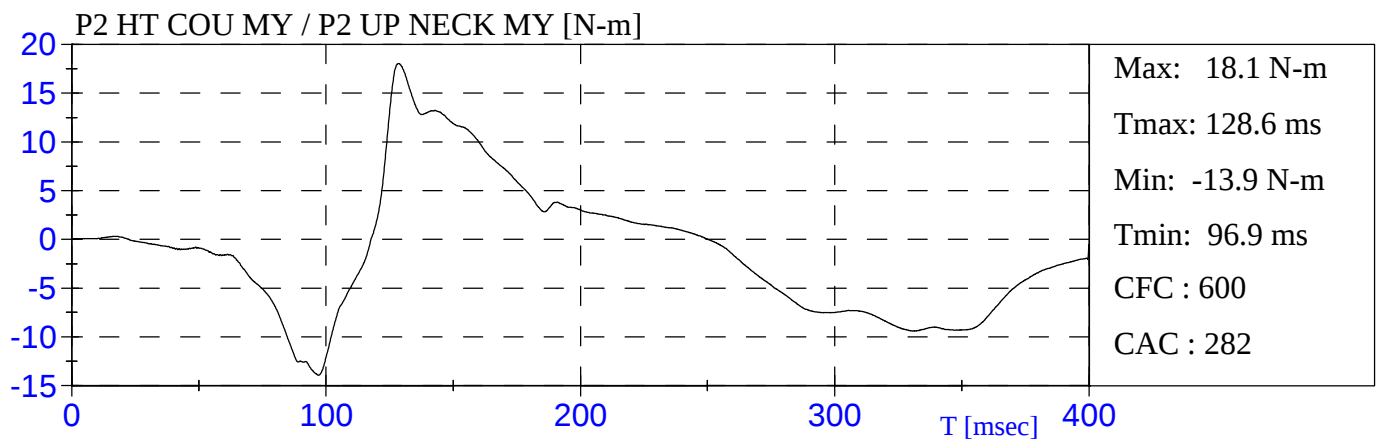
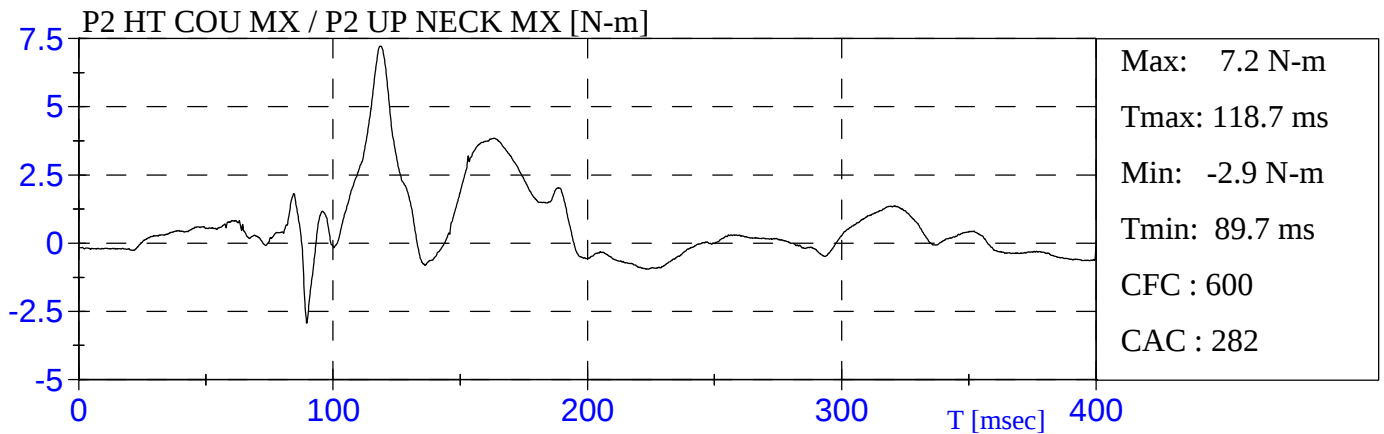




COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

Date: 2004-03-05
N° TC / TC No.: TC03-233

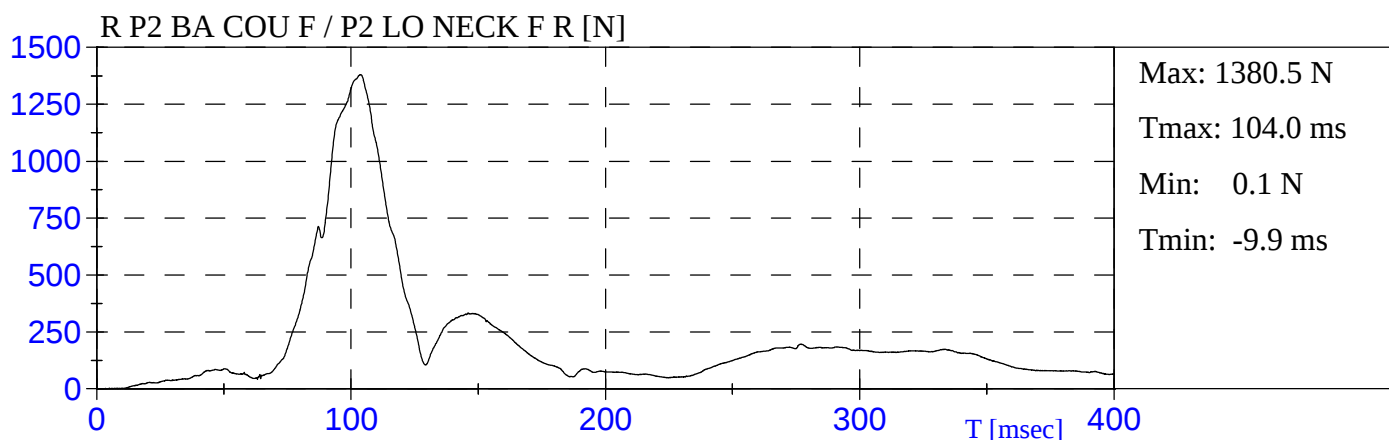
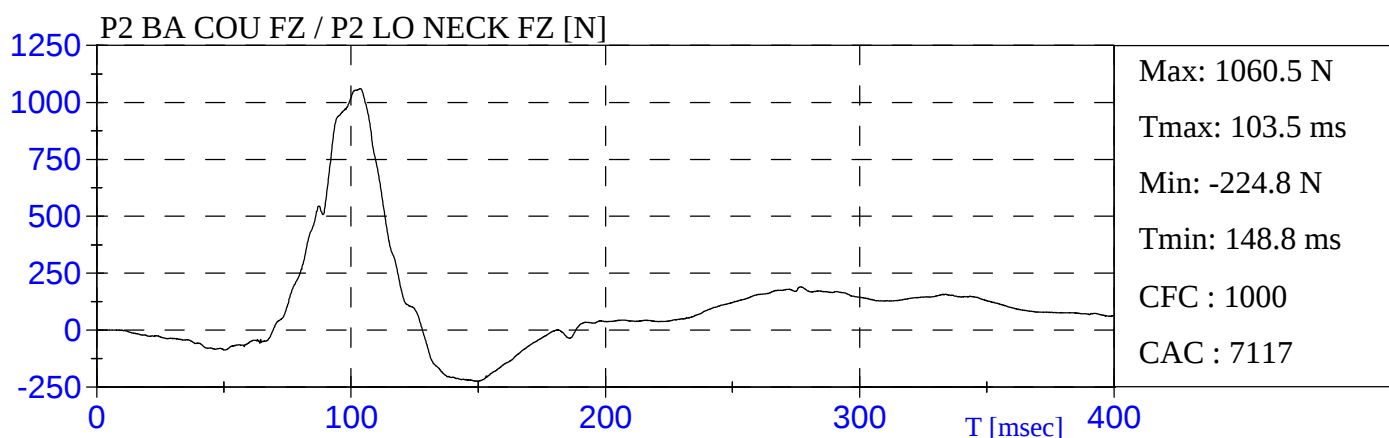
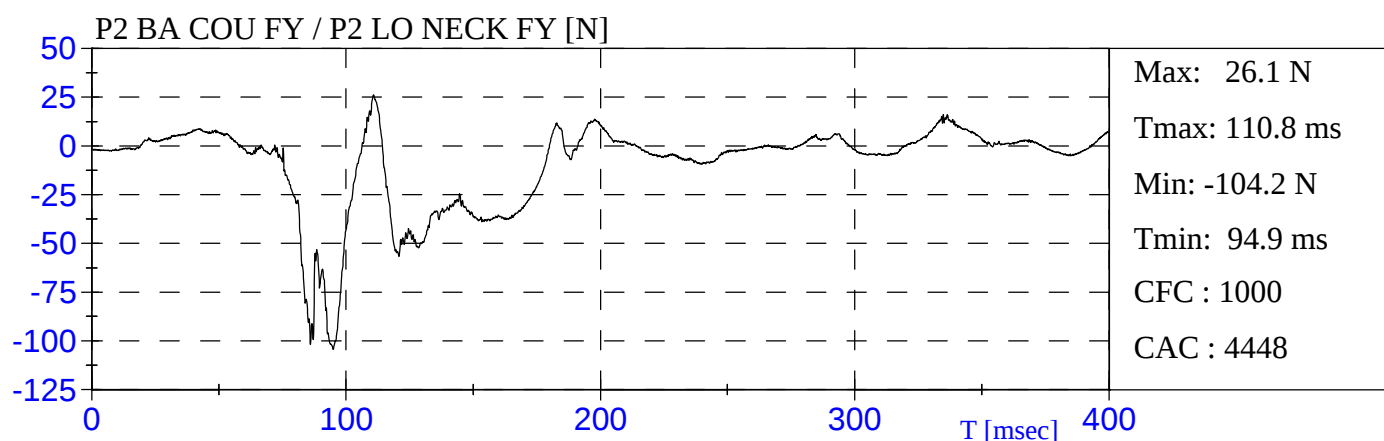
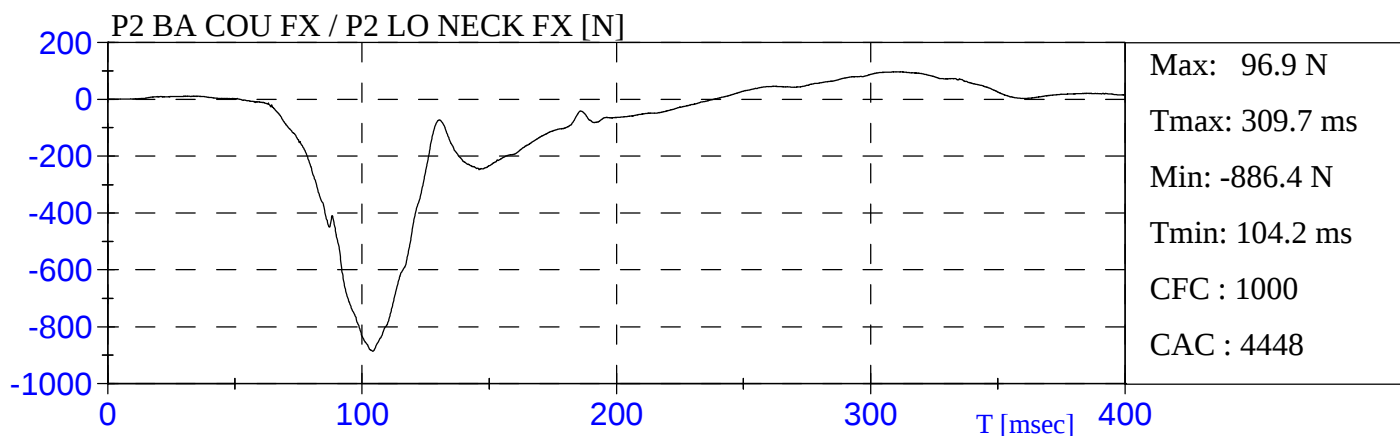


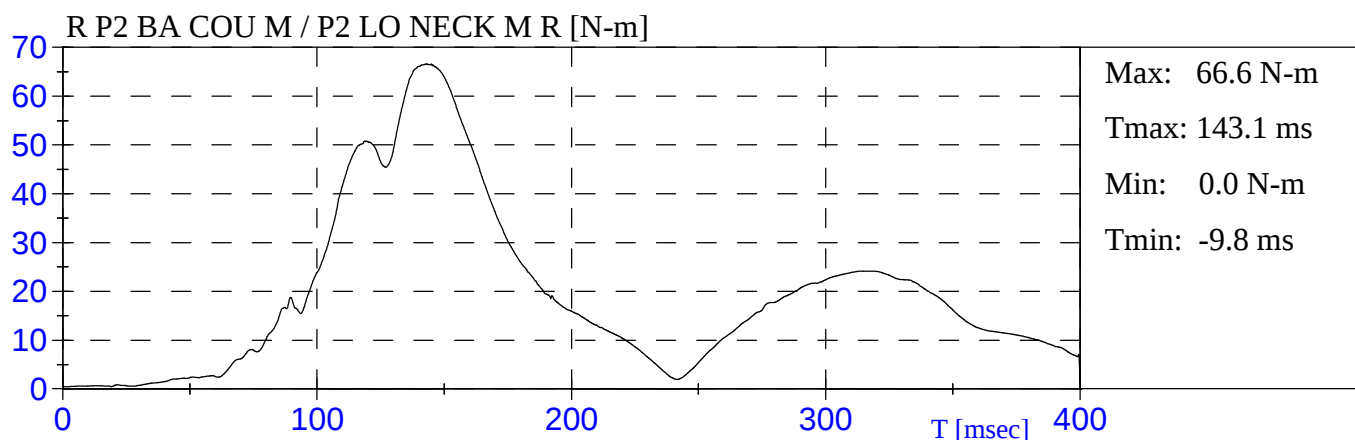
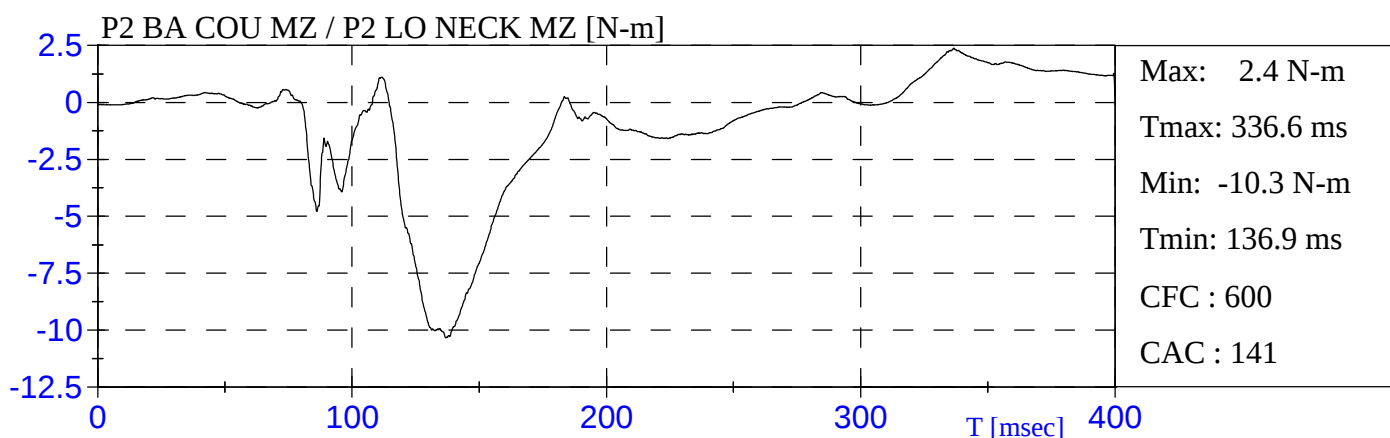
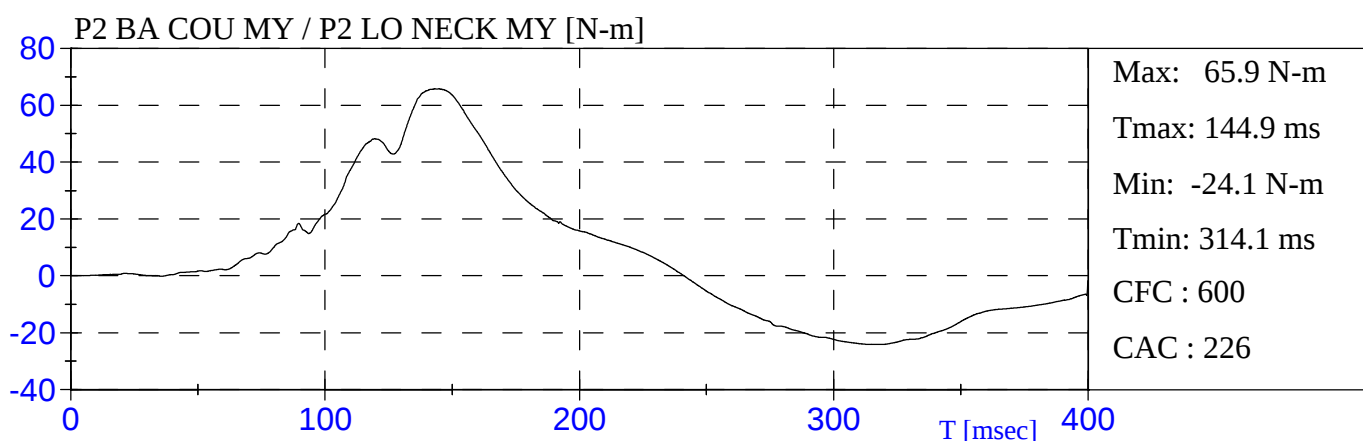
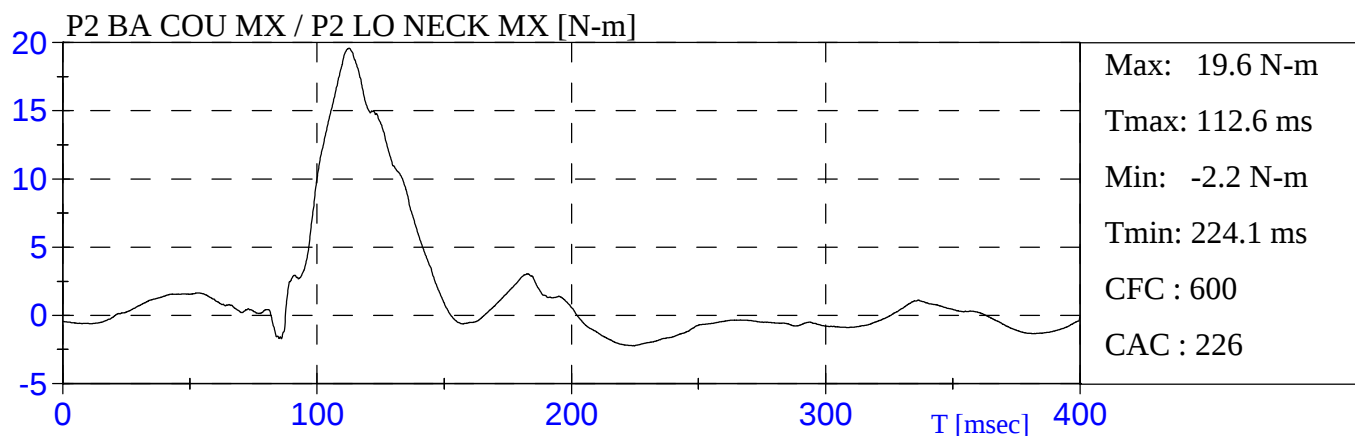


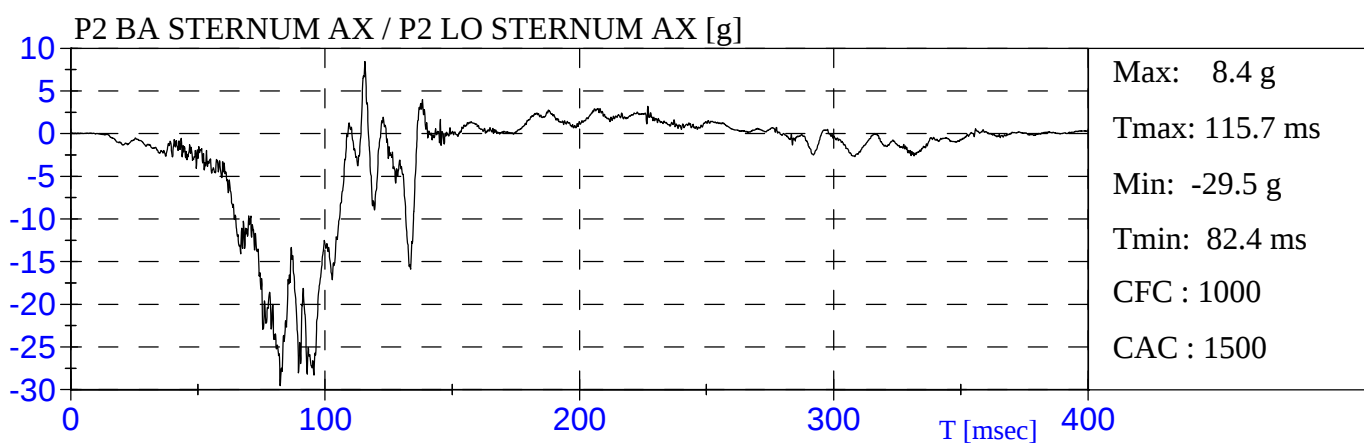
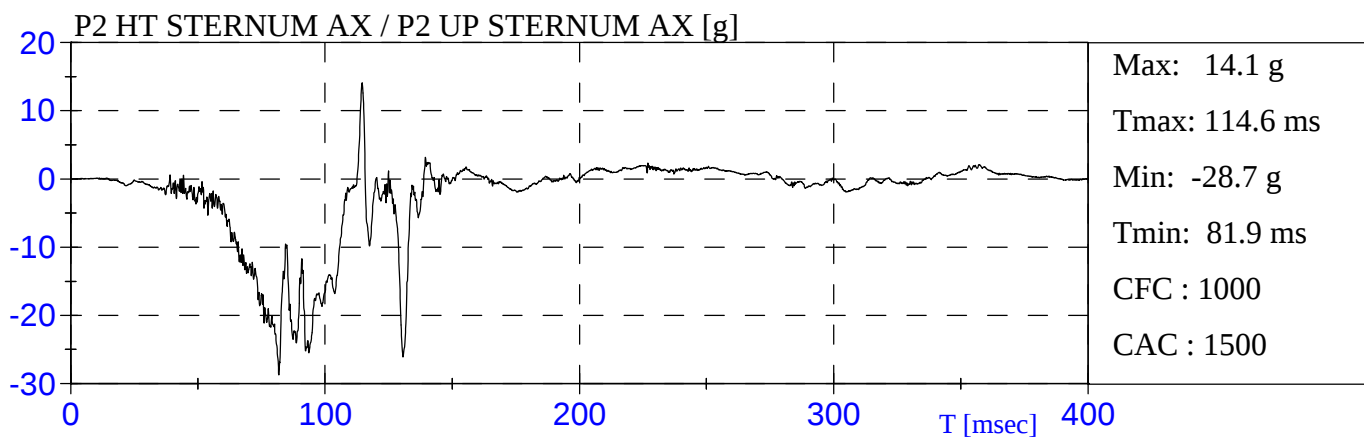


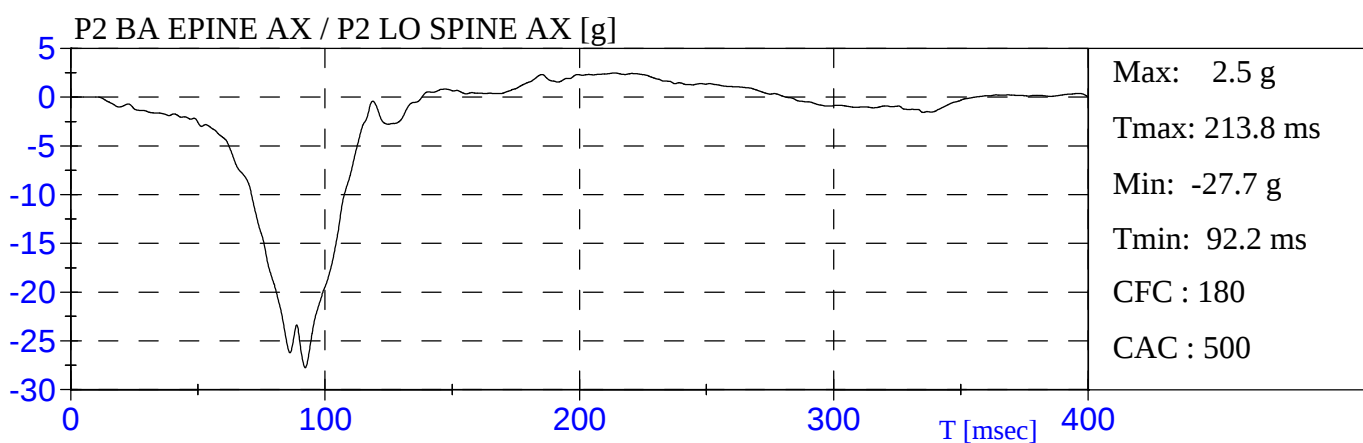
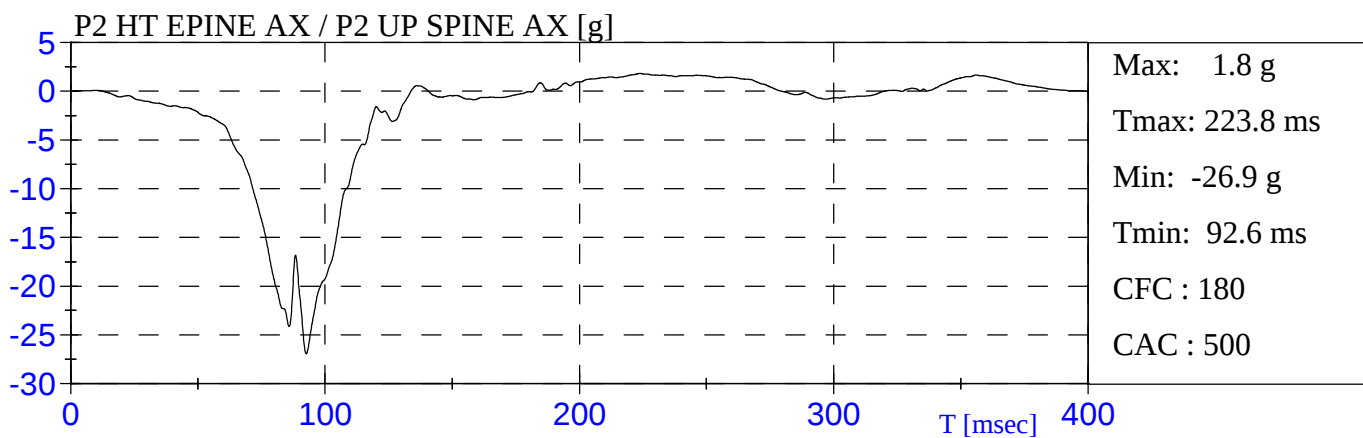
COLLISION FRONTALE
FRONTAL CRASH
SATURN VUE 2003

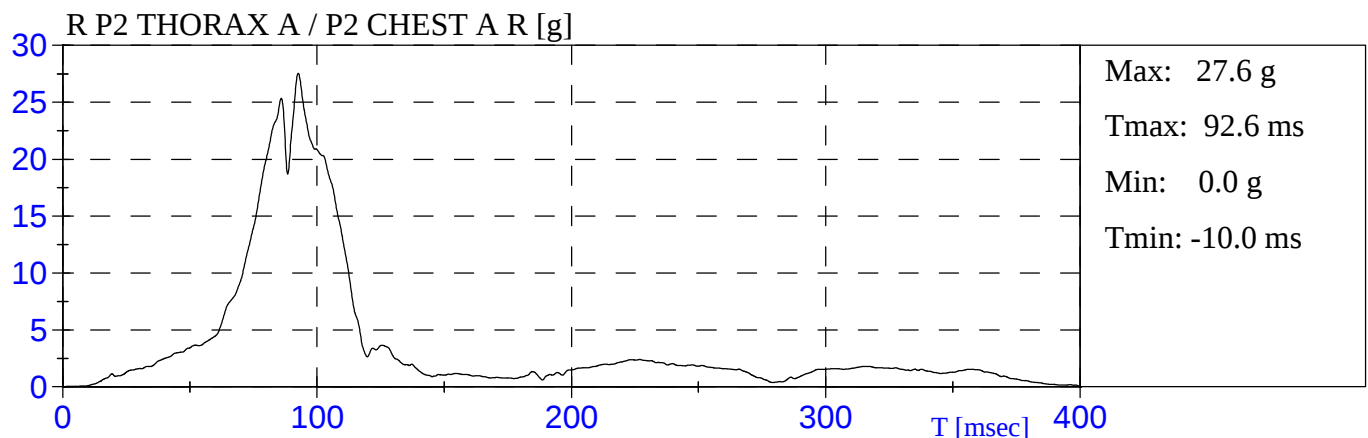
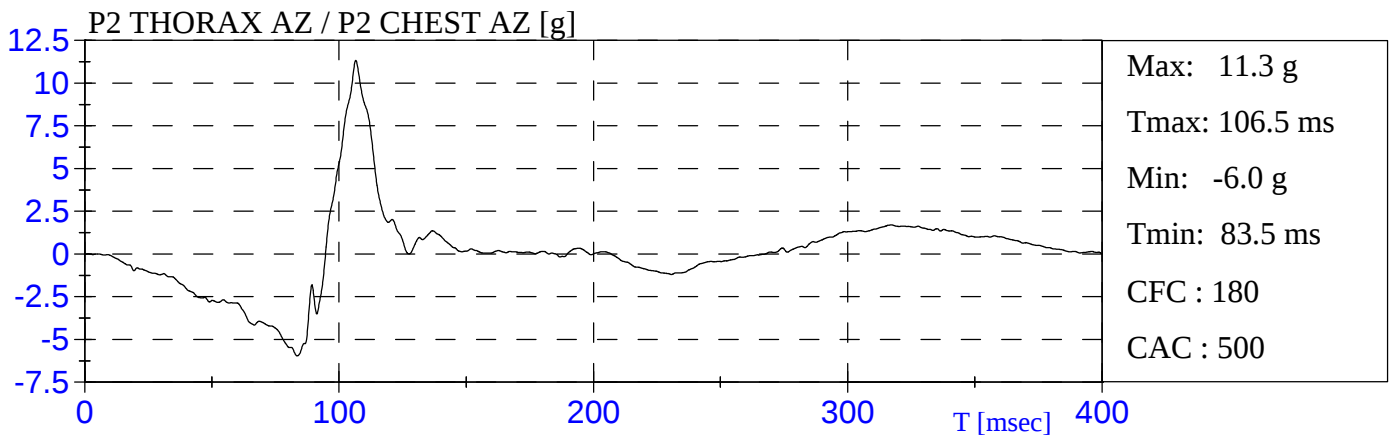
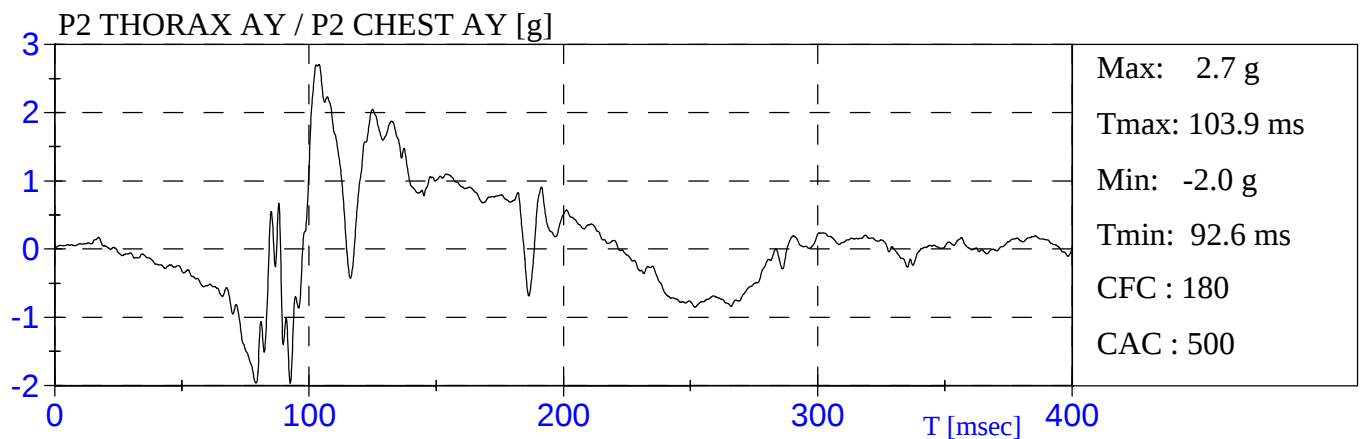
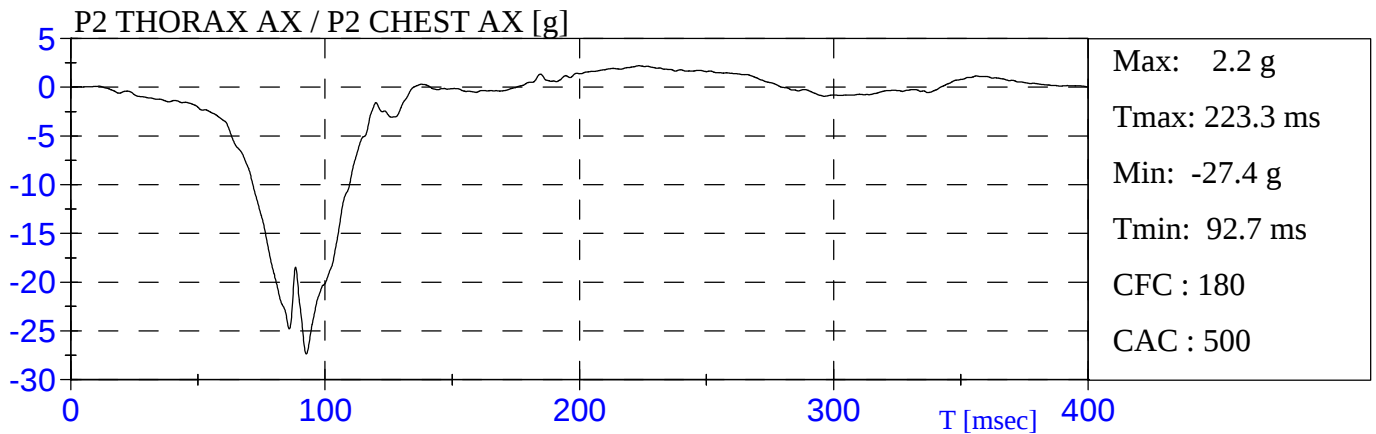
Date: 2004-03-05
N° TC / TC No.: TC03-233

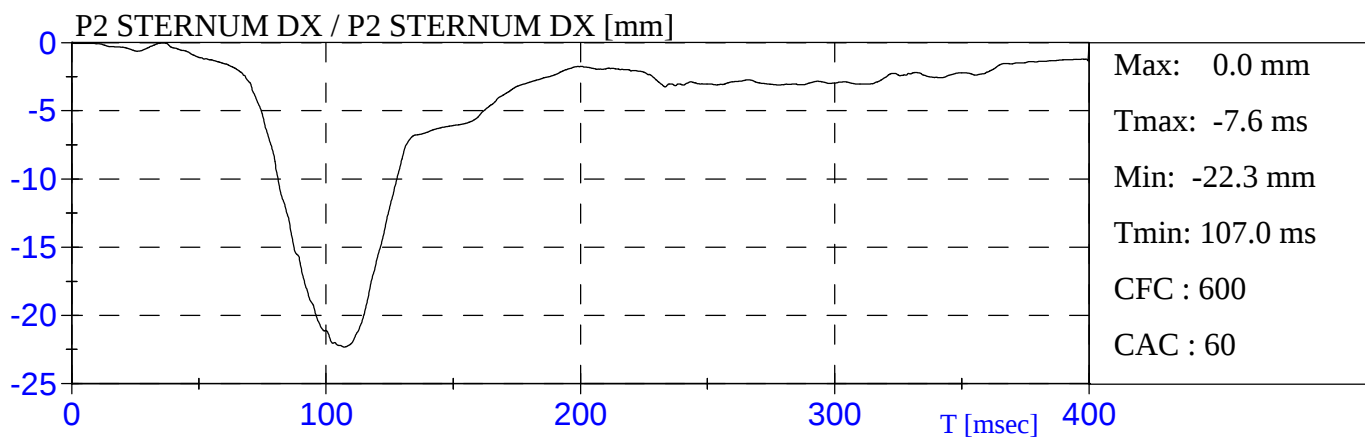


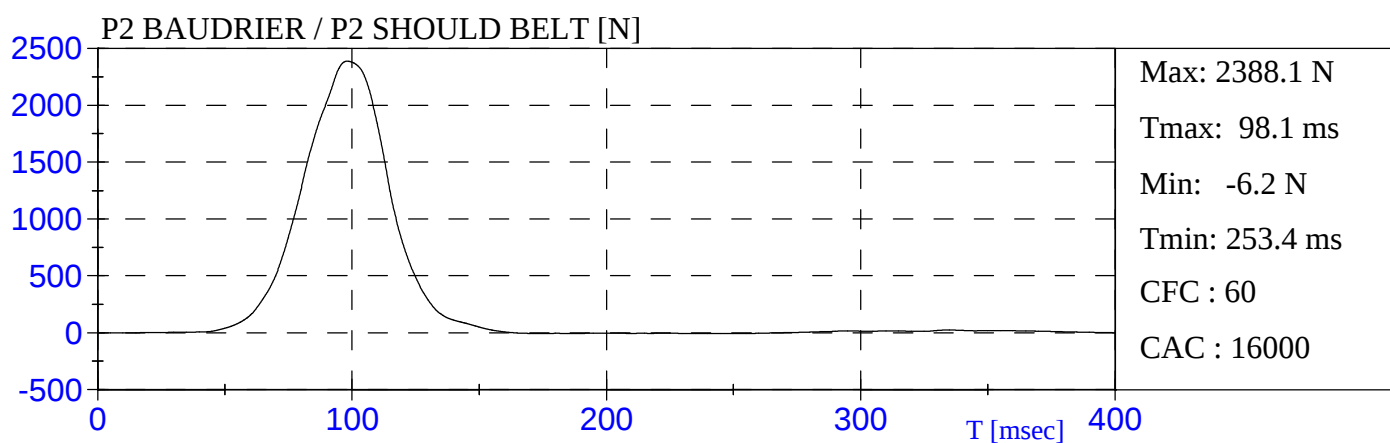
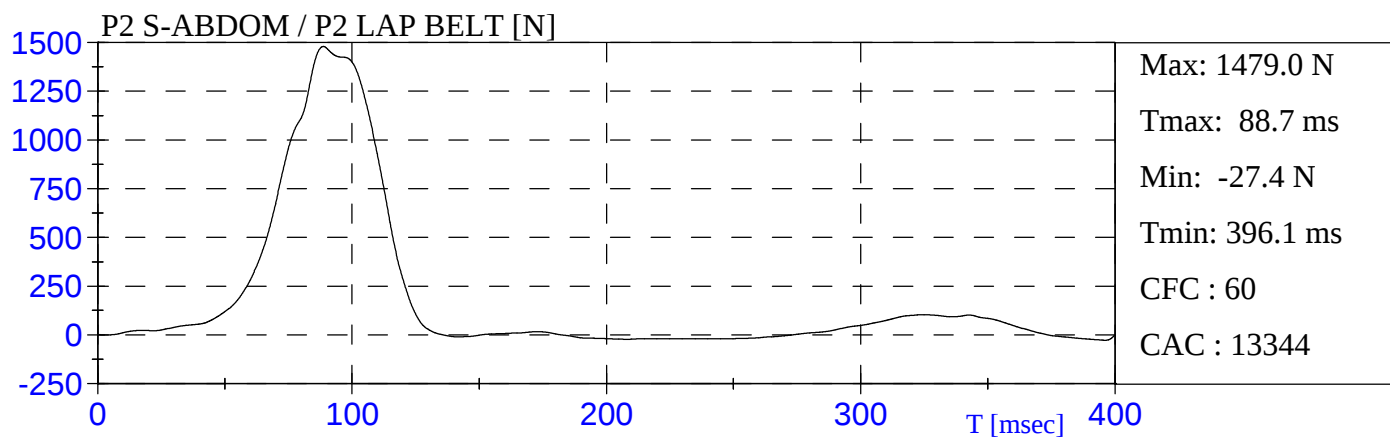


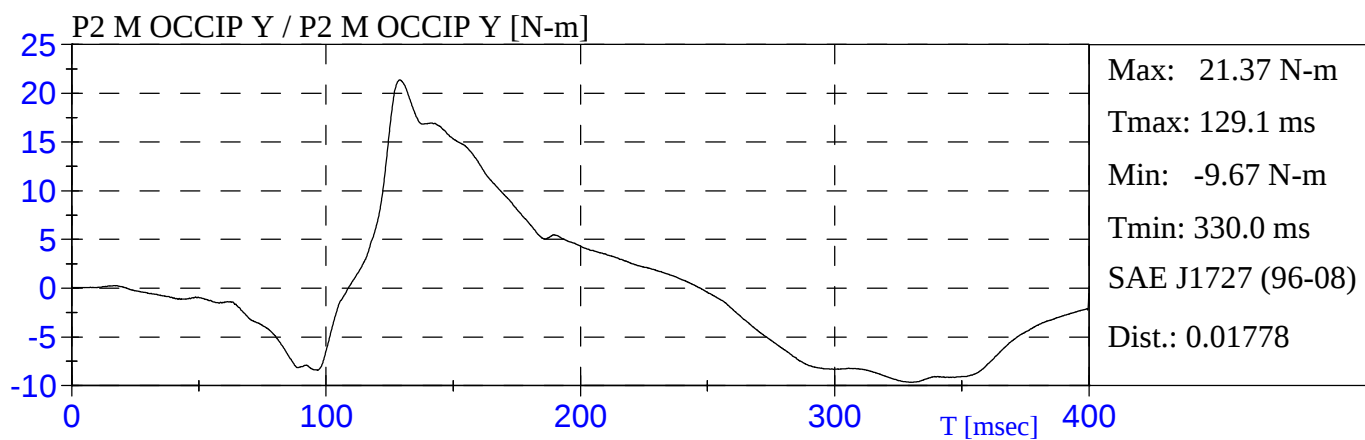


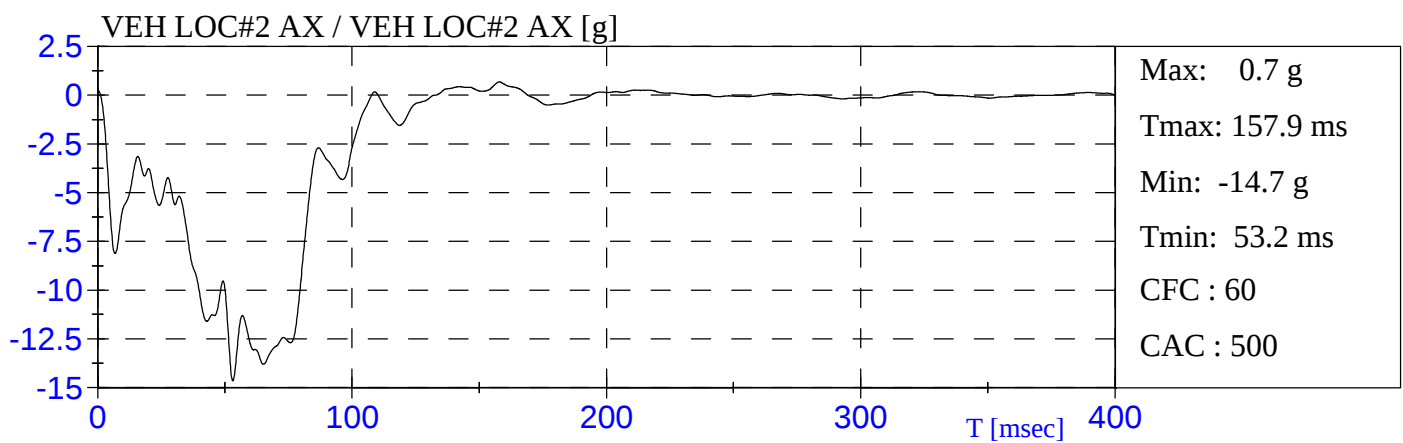
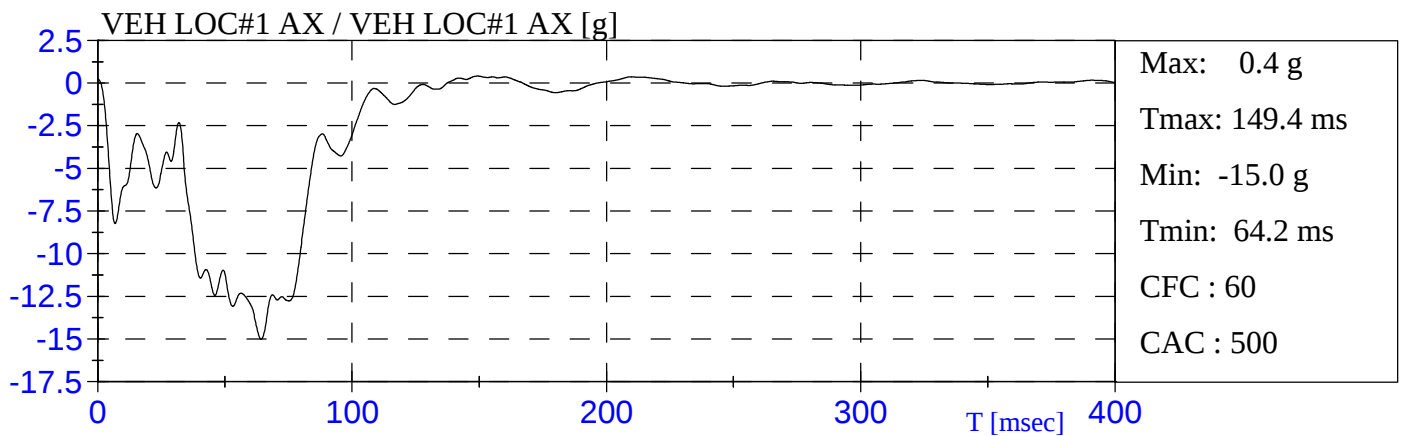


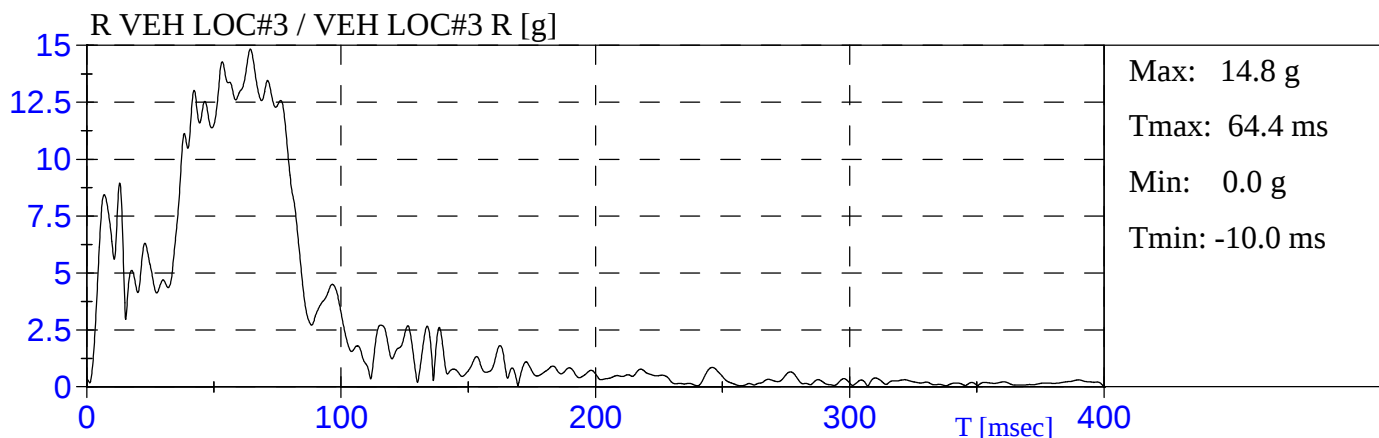
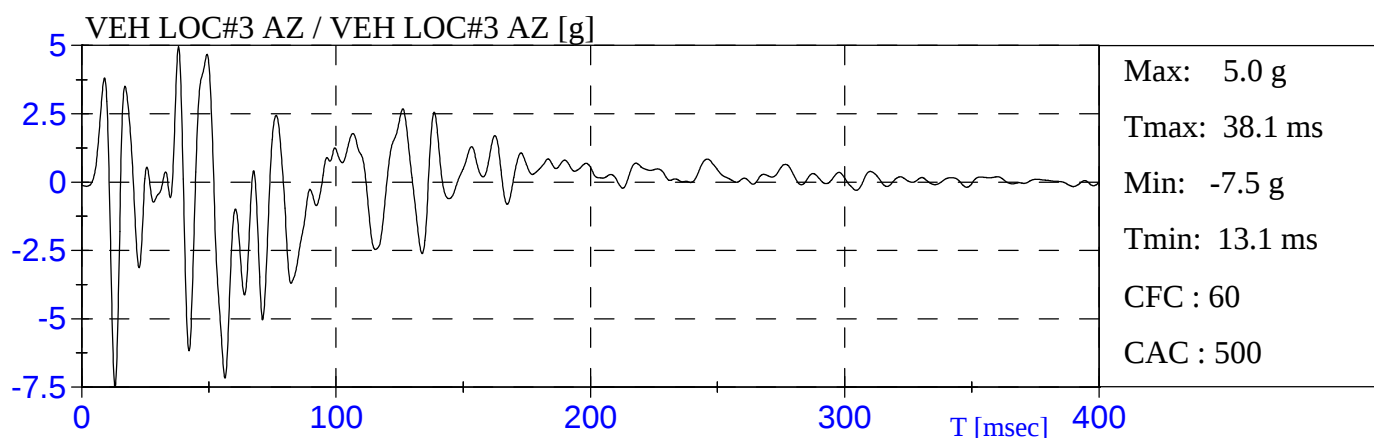
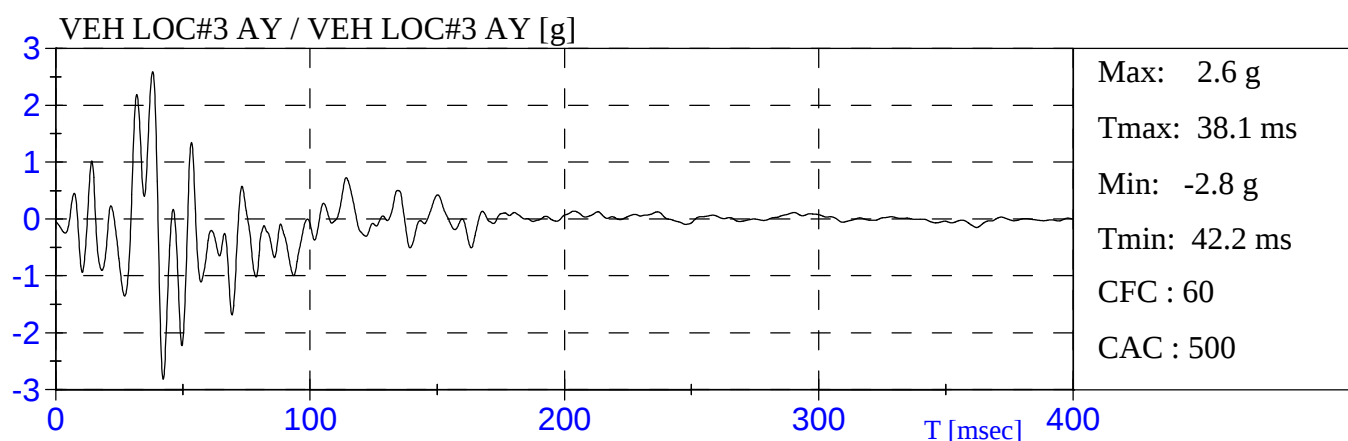
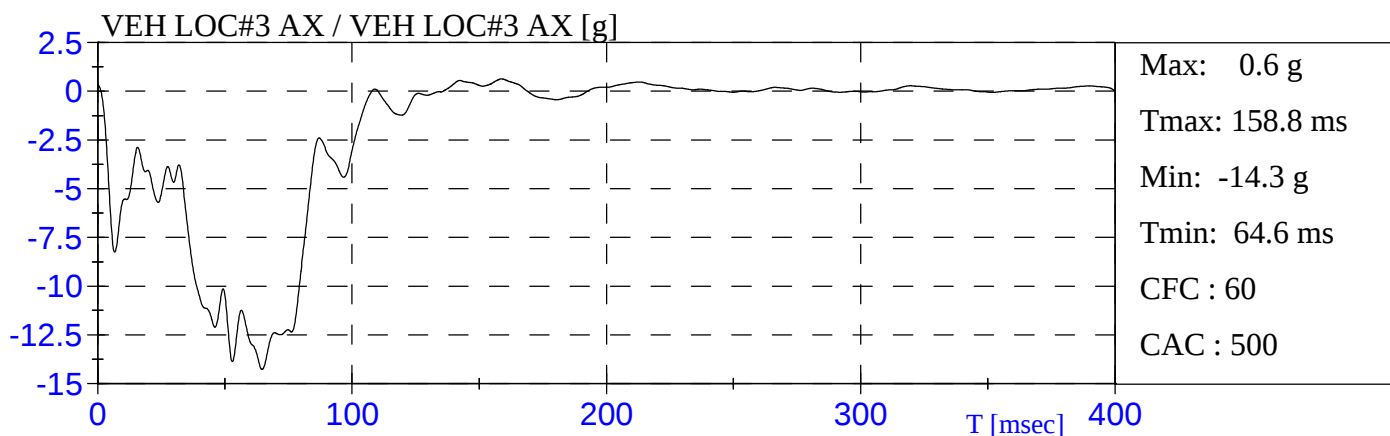


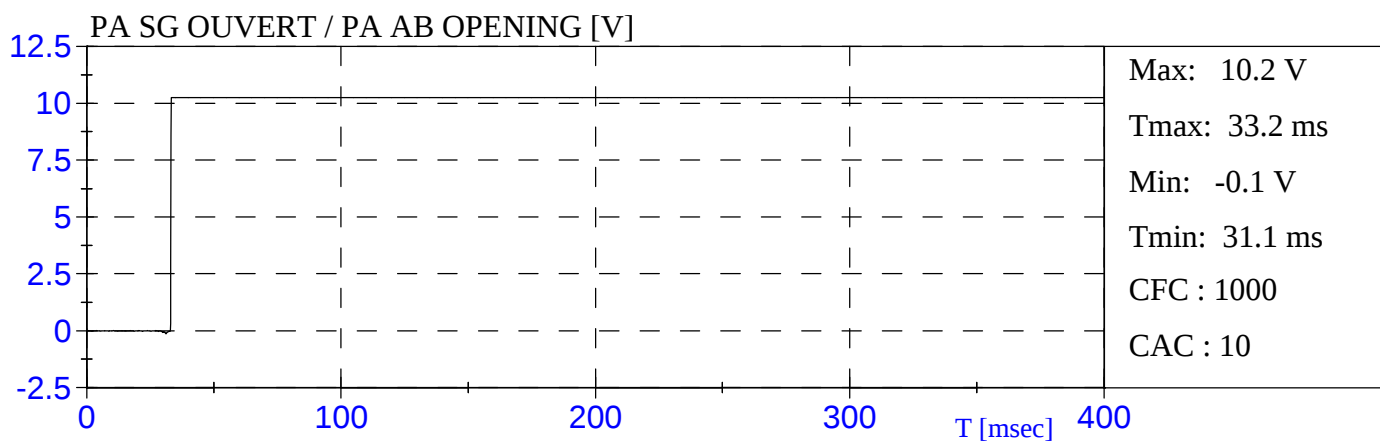
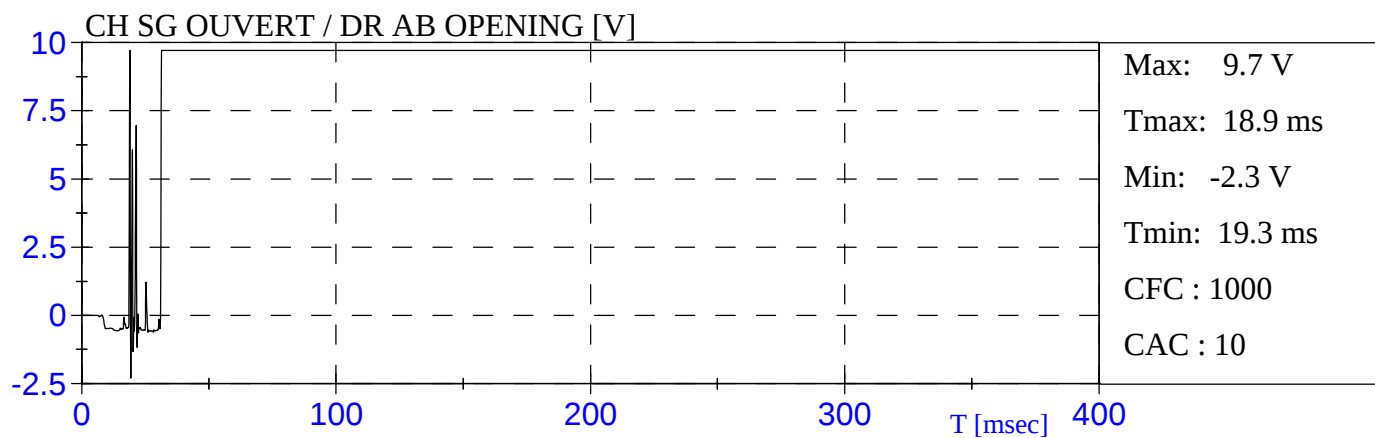


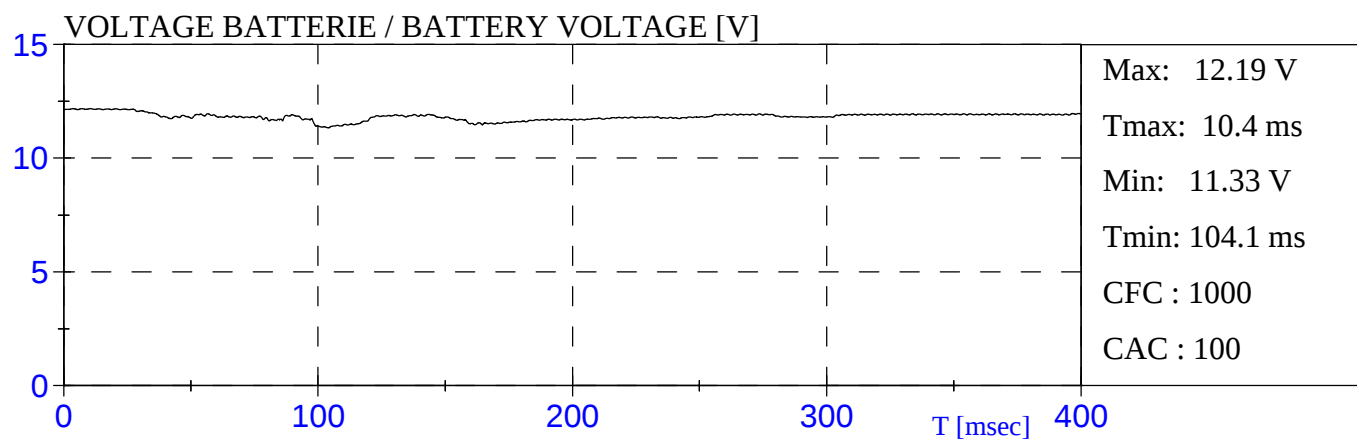


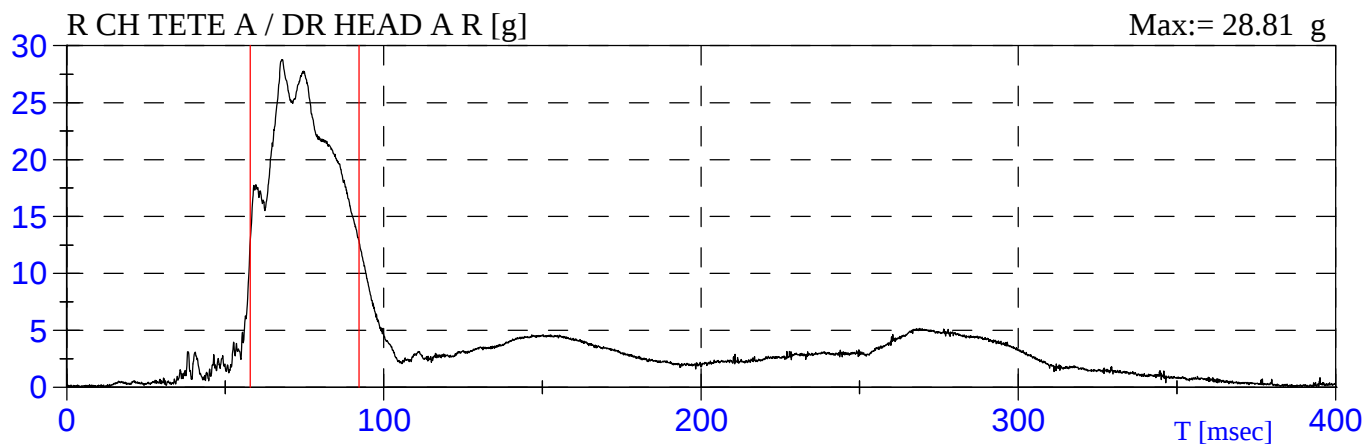










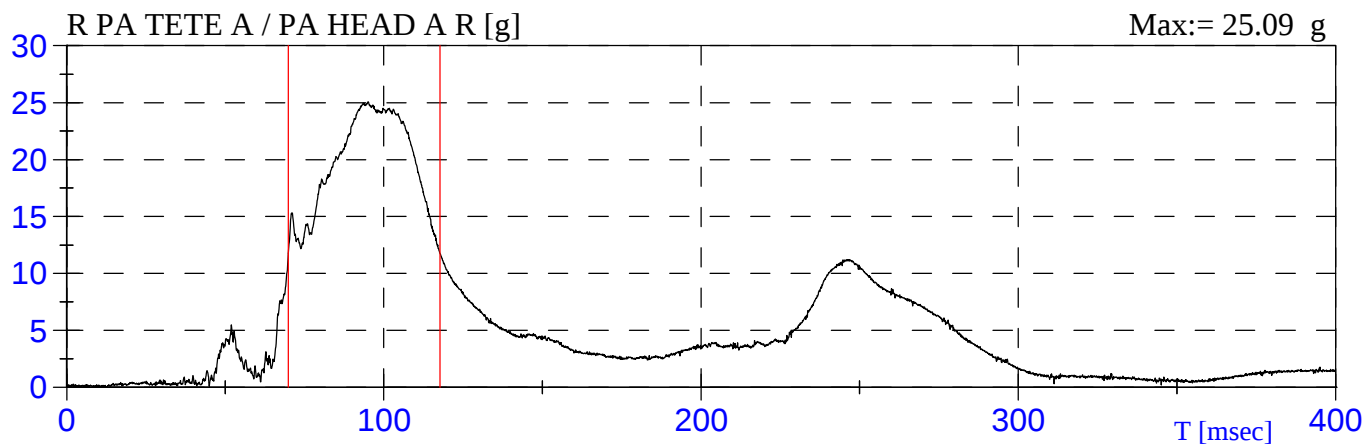


HEAD INJURY CRITERIA (HIC) *

CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 72	HIC(36ms):= 72	HIC(15ms):= 50
T1:= 57.9 ms	T1:= 57.9 ms	T1:= 65.1 ms
T2:= 92.2 ms	T2:= 92.2 ms	T2:= 80.1 ms

* Selon / According To: SAE J1727 96-08

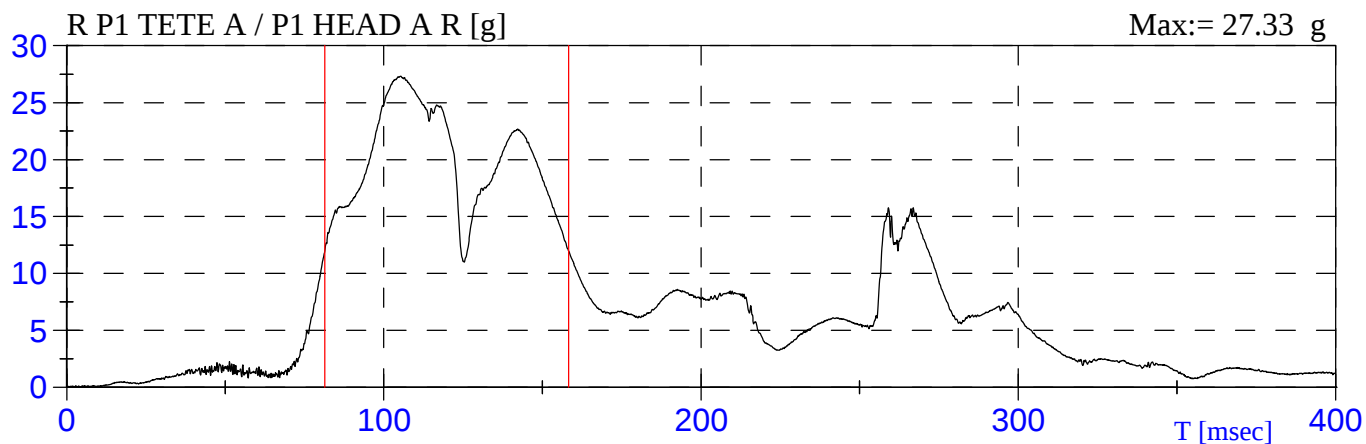


HEAD INJURY CRITERIA (HIC) *

CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 82	HIC(36ms):= 78	HIC(15ms):= 44
T1:= 69.9 ms	T1:= 78.4 ms	T1:= 90.4 ms
T2:= 117.7 ms	T2:= 114.4 ms	T2:= 105.4 ms

* Selon / According To: SAE J1727 96-08

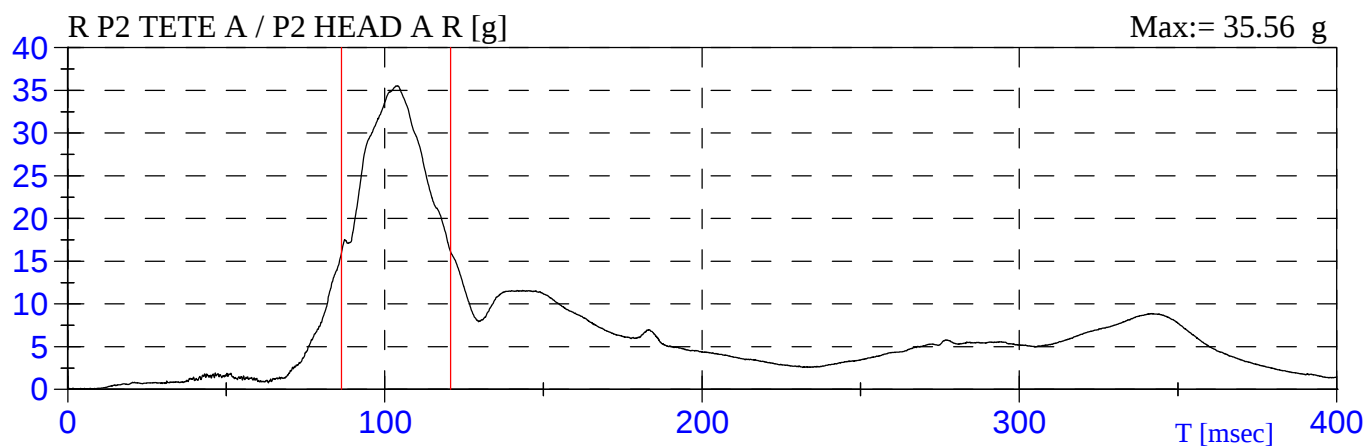


HEAD INJURY CRITERIA (HIC) *

CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 136	HIC(36ms):= 90	HIC(15ms):= 52
T1:= 81.4 ms	T1:= 87.4 ms	T1:= 98.9 ms
T2:= 158.3 ms	T2:= 123.4 ms	T2:= 113.9 ms

* Selon / According To: SAE J1727 96-08

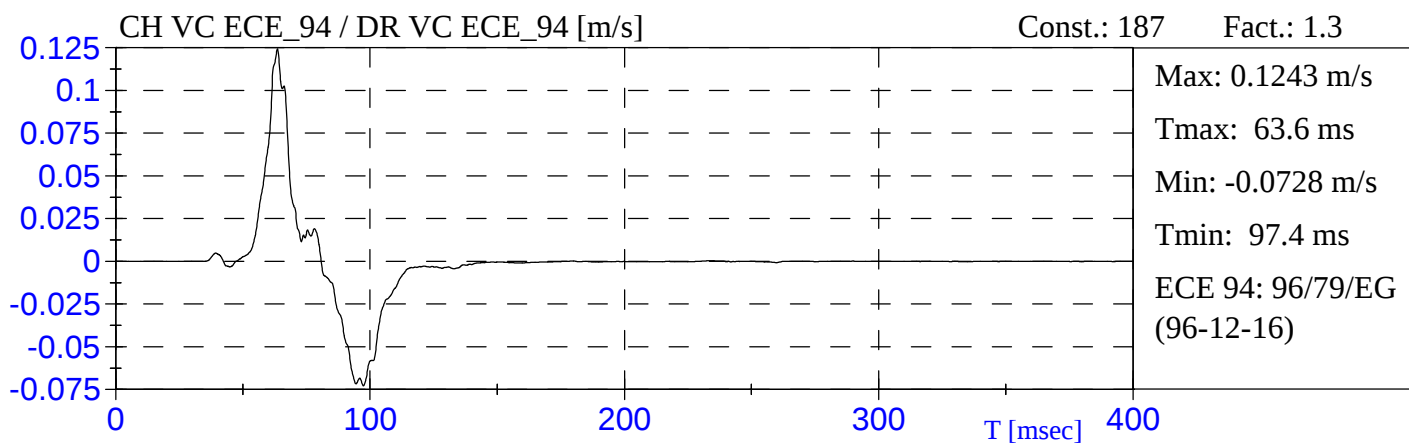
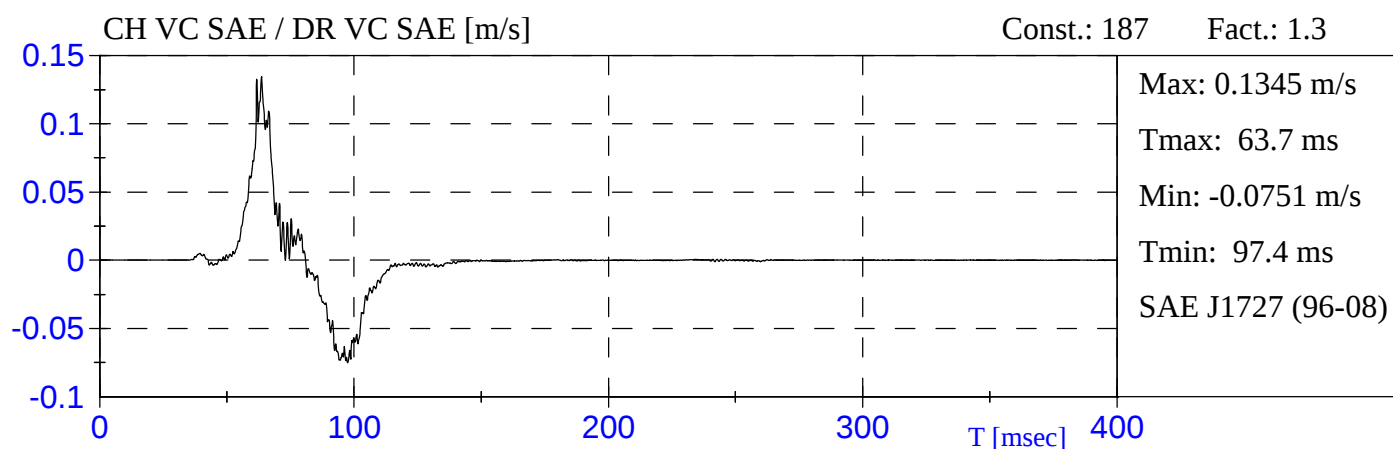
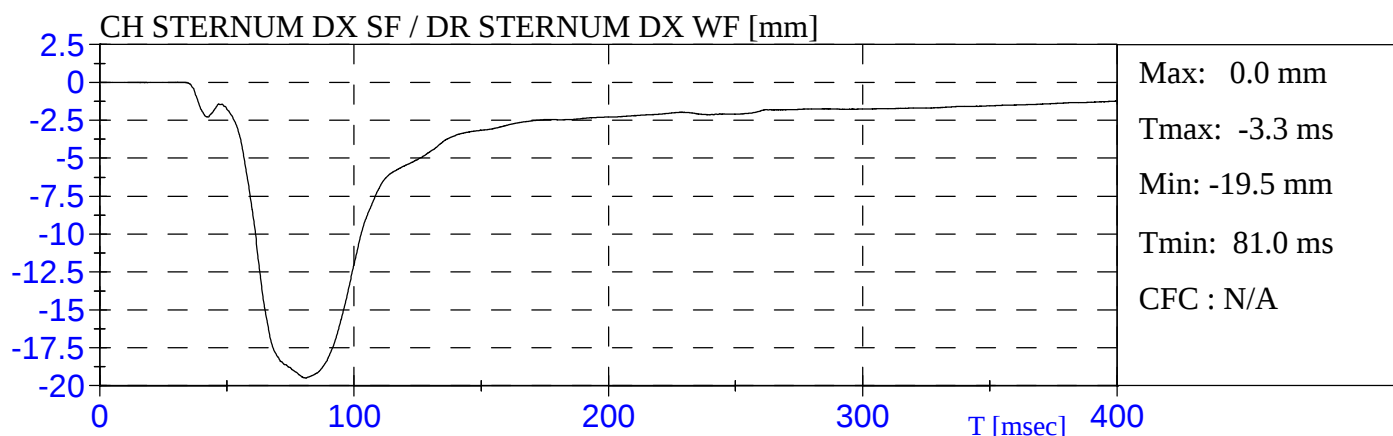


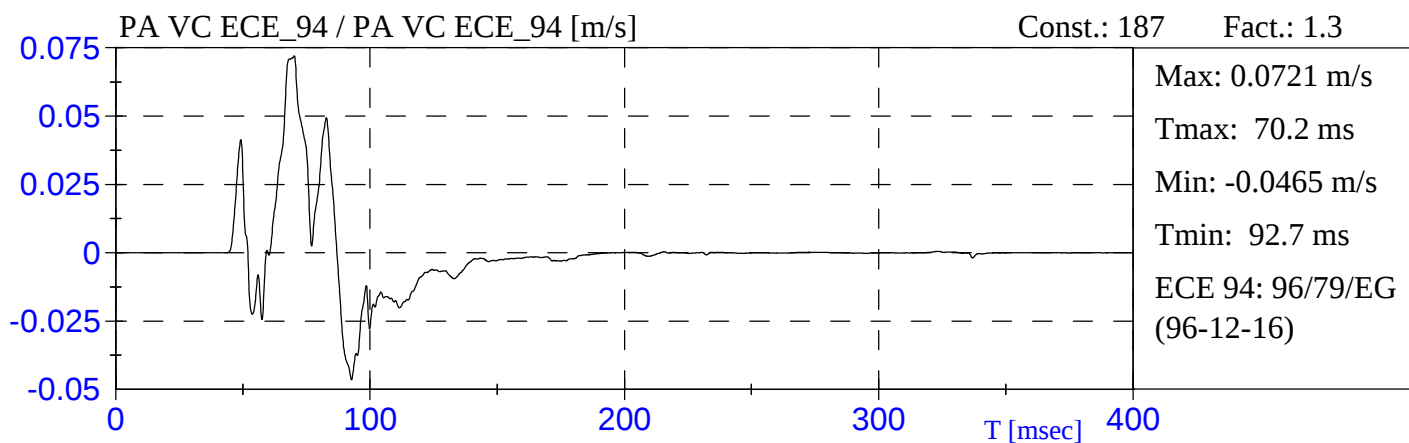
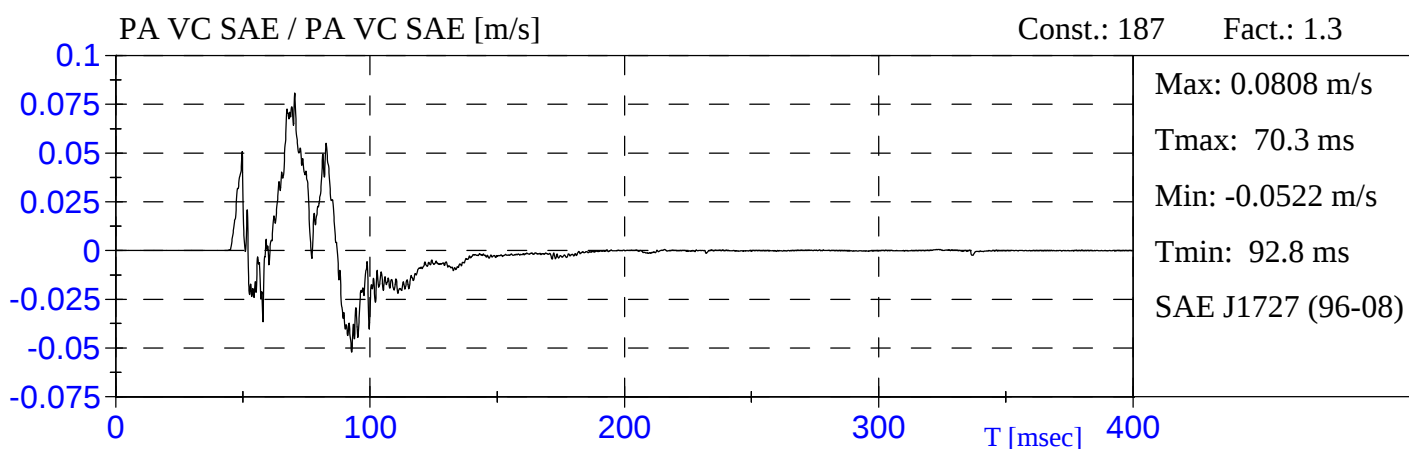
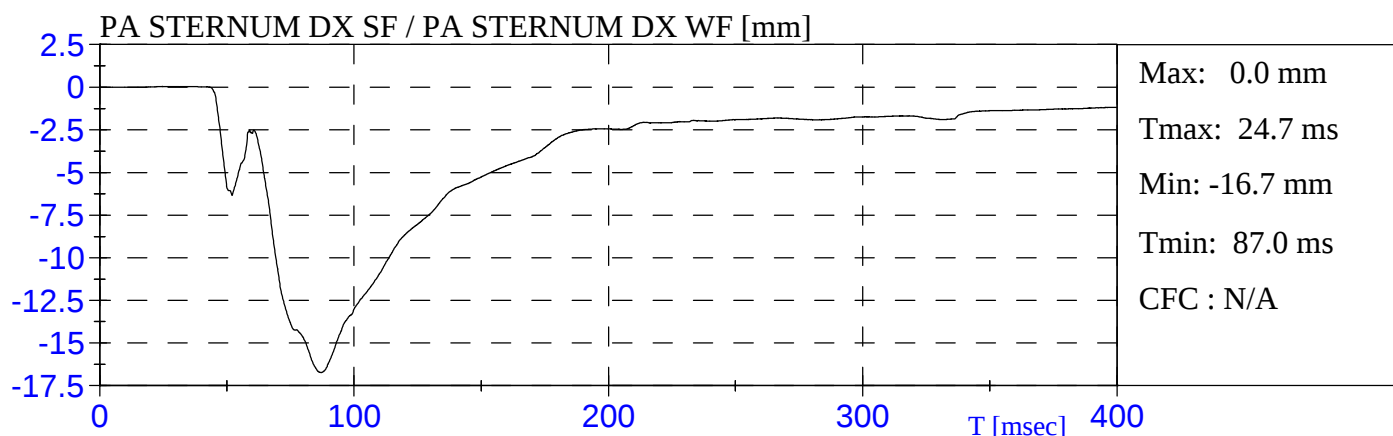
HEAD INJURY CRITERIA (HIC) *

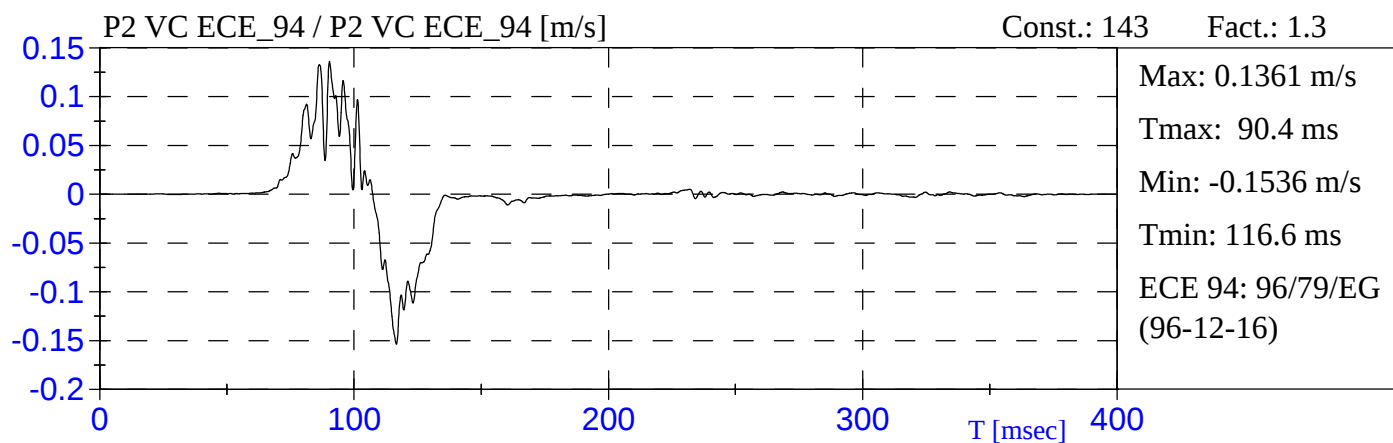
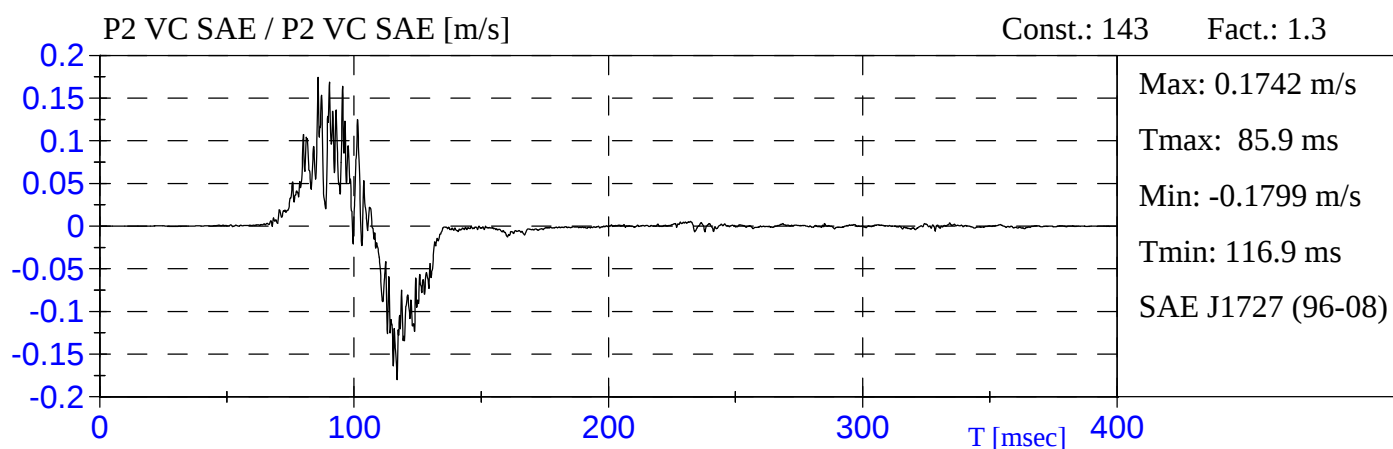
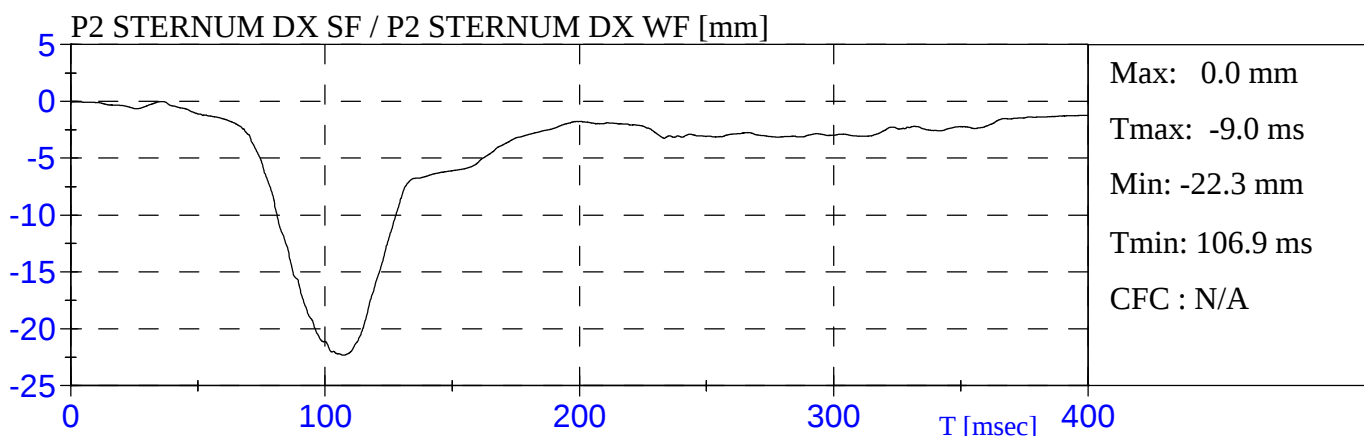
CRITÈRE DE BLESSURE DE LA TÊTE

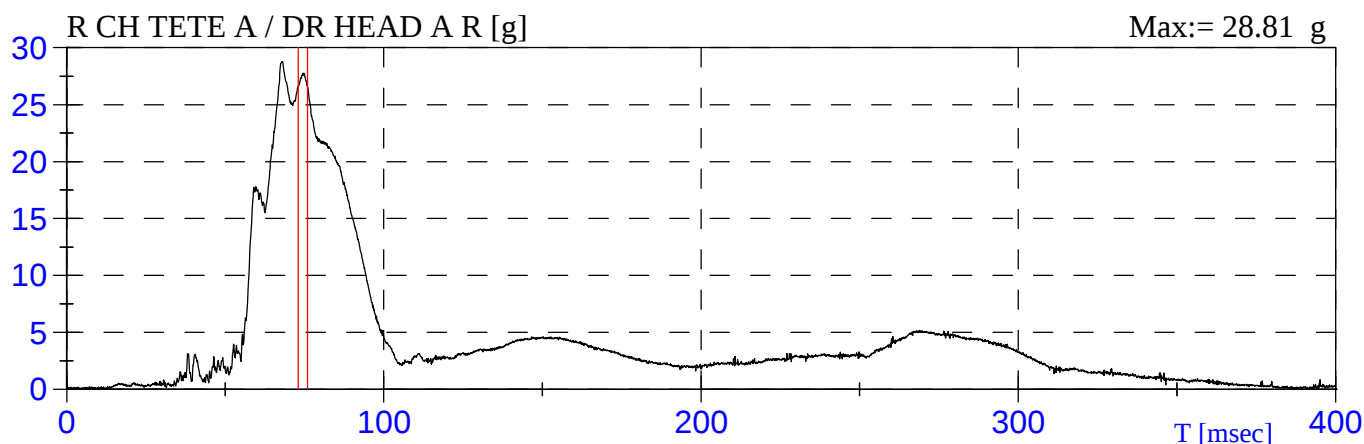
HIC:= 128	HIC(36ms):= 128	HIC(15ms):= 93
T1:= 86.3 ms	T1:= 86.3 ms	T1:= 95.1 ms
T2:= 120.8 ms	T2:= 120.8 ms	T2:= 110.1 ms

* Selon / According To: SAE J1727 96-08



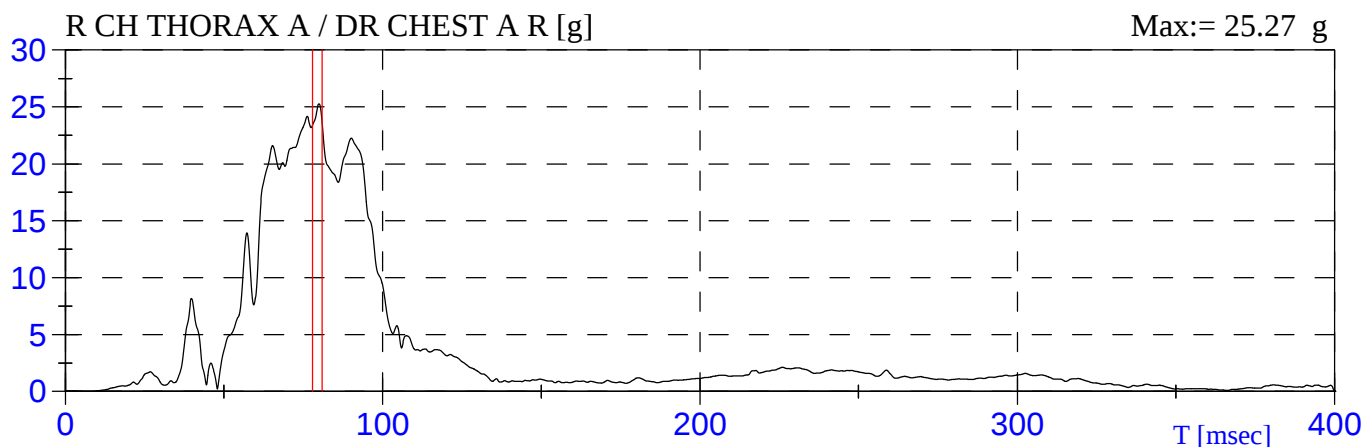






CLIP 3ms *

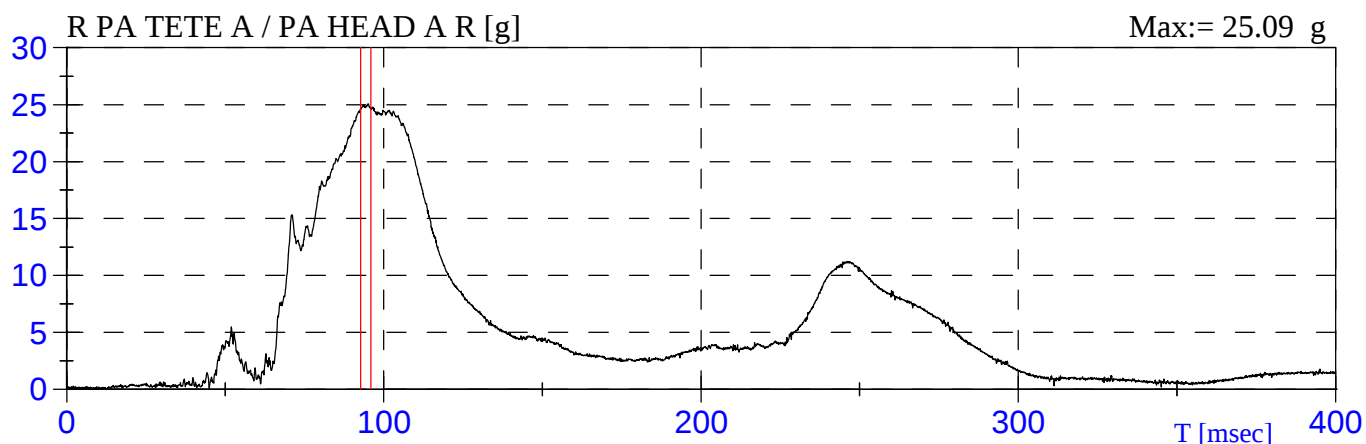
Acc. := 26.63 g	T1:= 73.0 ms	T2:= 76.0 ms
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CLIP 3ms *

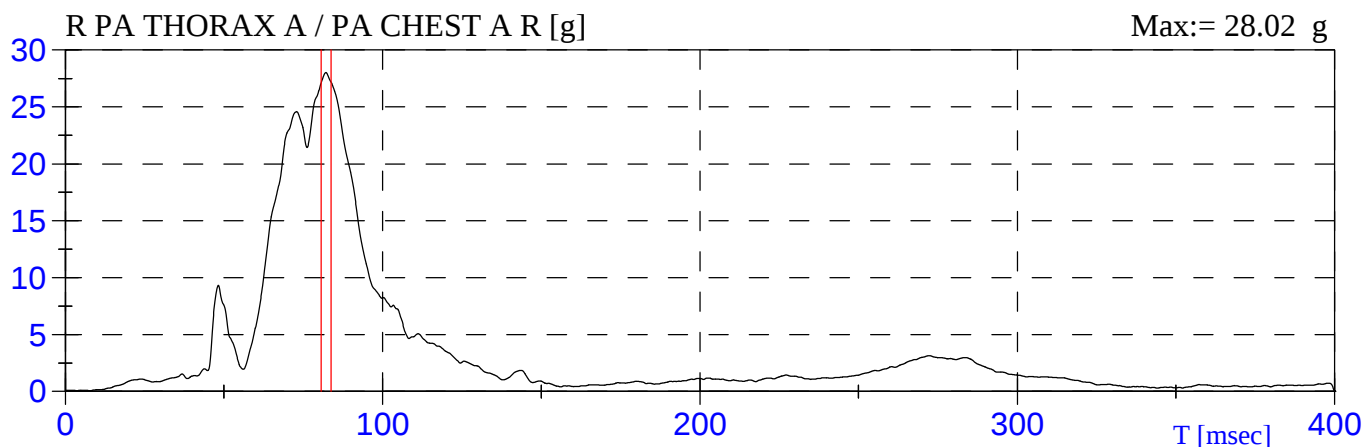
Acc. := 23.37 g	T1:= 78.0 ms	T2:= 81.0 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95



CLIP 3ms *

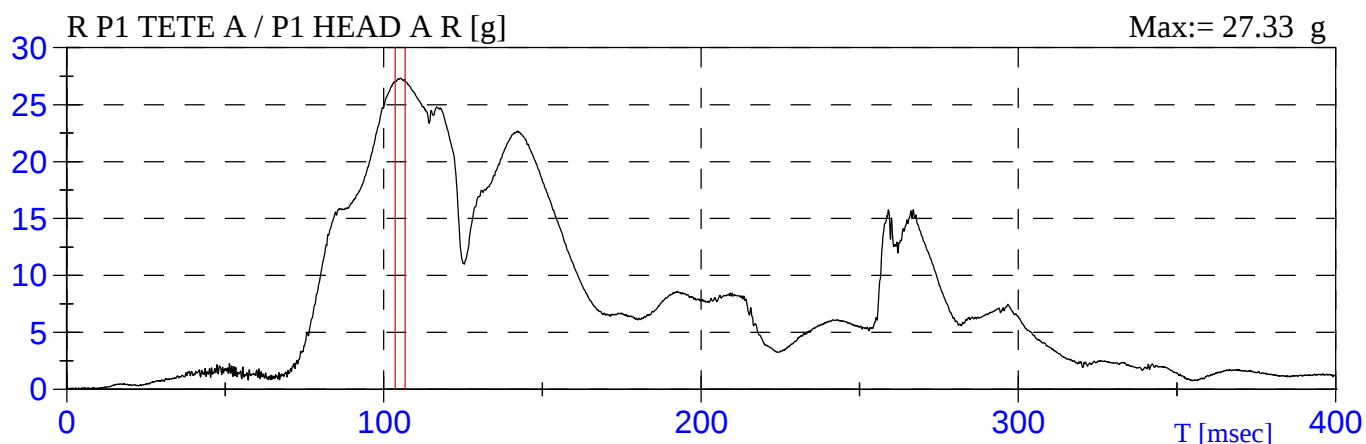
Acc. := 24.63 g	T1:= 92.7 ms	T2:= 95.9 ms
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CLIP 3ms *

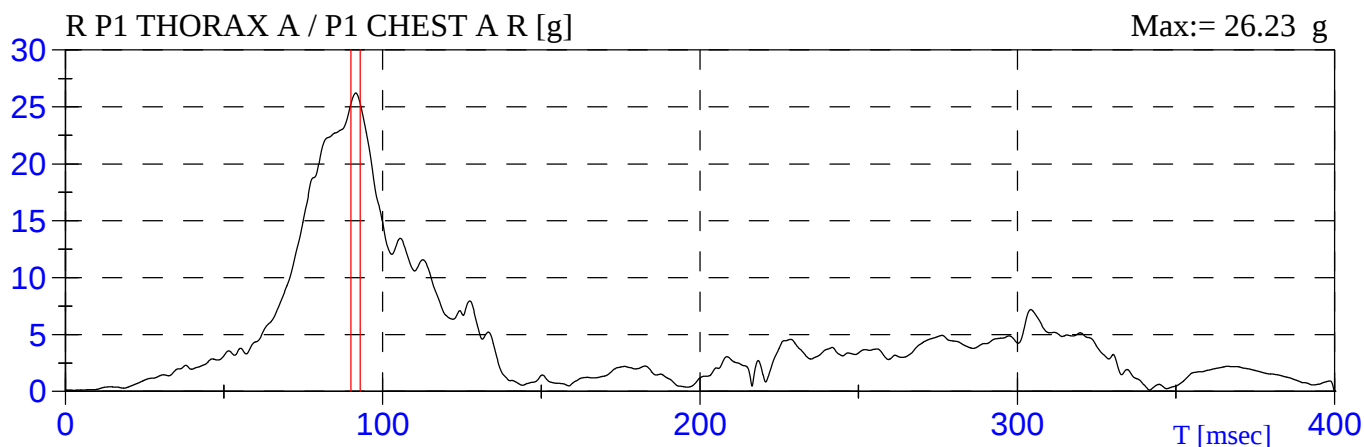
Acc. := 27.20 g	T1:= 80.7 ms	T2:= 83.7 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95



CLIP 3ms *

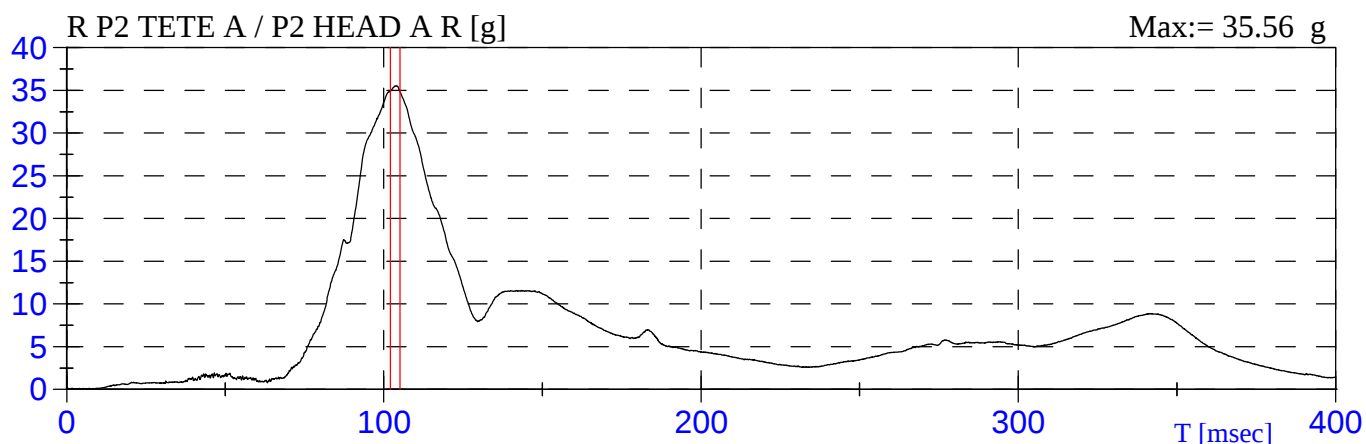
Acc. := 27.03 g	T1:= 103.5 ms	T2:= 106.8 ms
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CLIP 3ms *

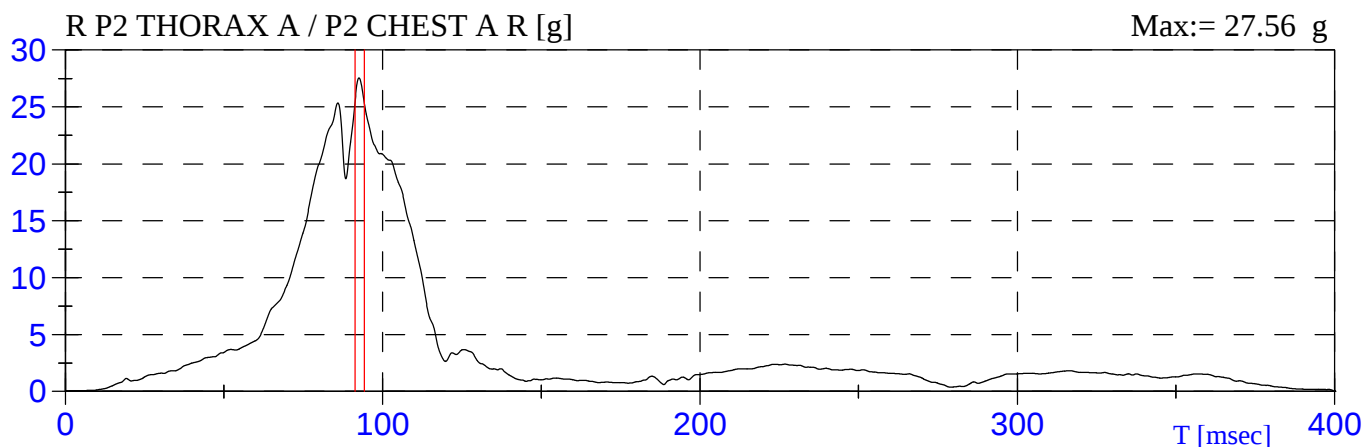
Acc. := 25.29 g	T1:= 90.0 ms	T2:= 93.0 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95



CLIP 3ms *

Acc. := 34.94 g	T1:= 102.1 ms	T2:= 105.1 ms
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CLIP 3ms *

Acc. := 25.34 g	T1:= 91.3 ms	T2:= 94.3 ms
-----------------	--------------	--------------

* Selon / According To: NHTSA CLIP VERSION 2.1 5/95

INDEX DU TIBIA *
TIBIA INDEX *

TI Chauffeur / Driver

Mc := 115 N-m

Fc := 22.9 kN

TIBIA	GAUCHE / LEFT	DROIT / RIGHT
HAUT / UPPER	0.268	0.237
BAS / LOWER	0.251	0.275

TI Passager / Passenger

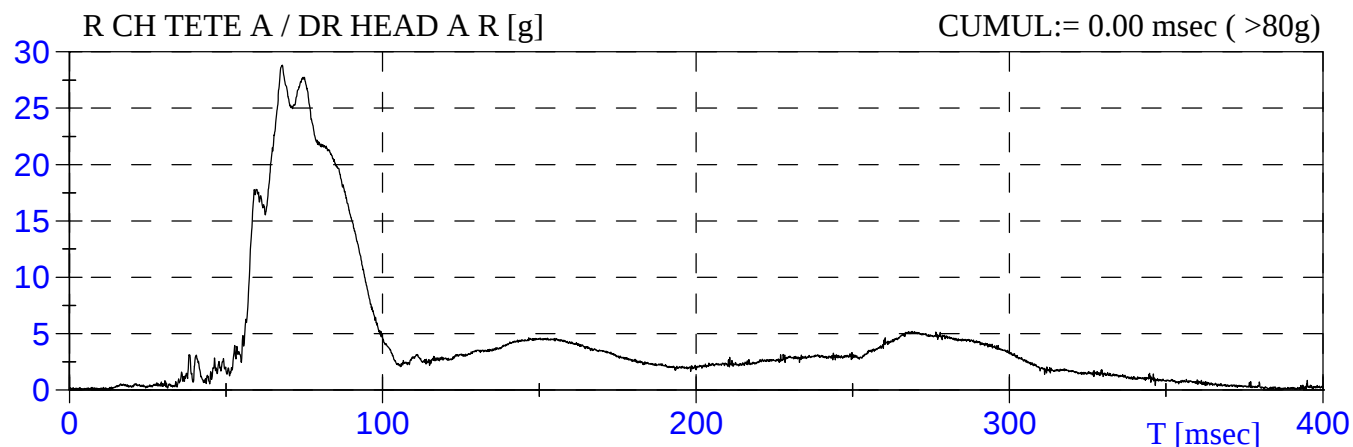
Mc := 115 N-m

Fc := 22.9 kN

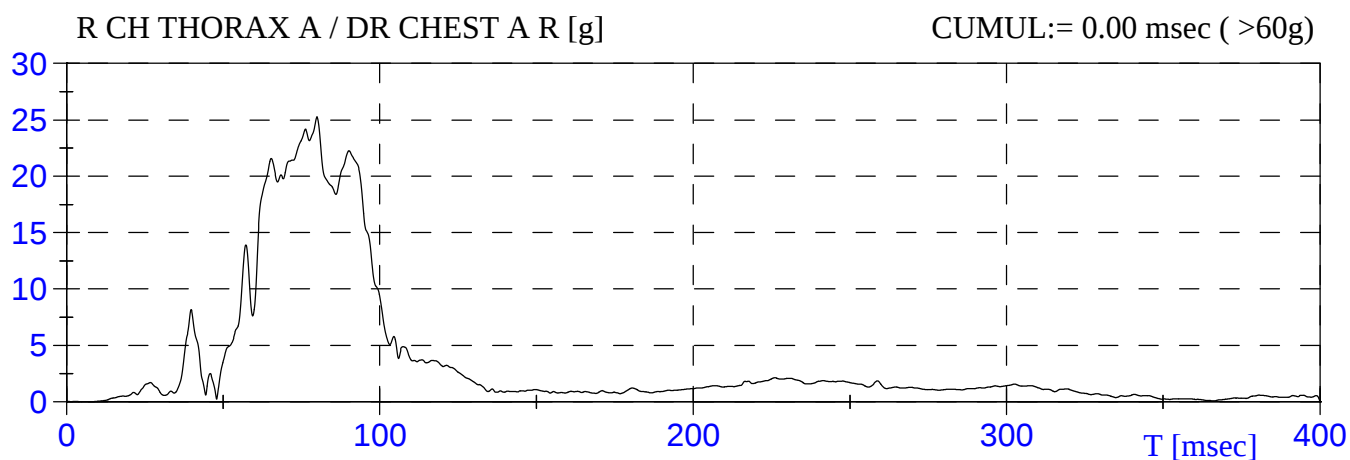
TIBIA	GAUCHE / LEFT	DROIT / RIGHT
HAUT / UPPER	0.345	0.367
BAS / LOWER	0.312	0.310

* Selon / According To: SAE J1727 AUG 96

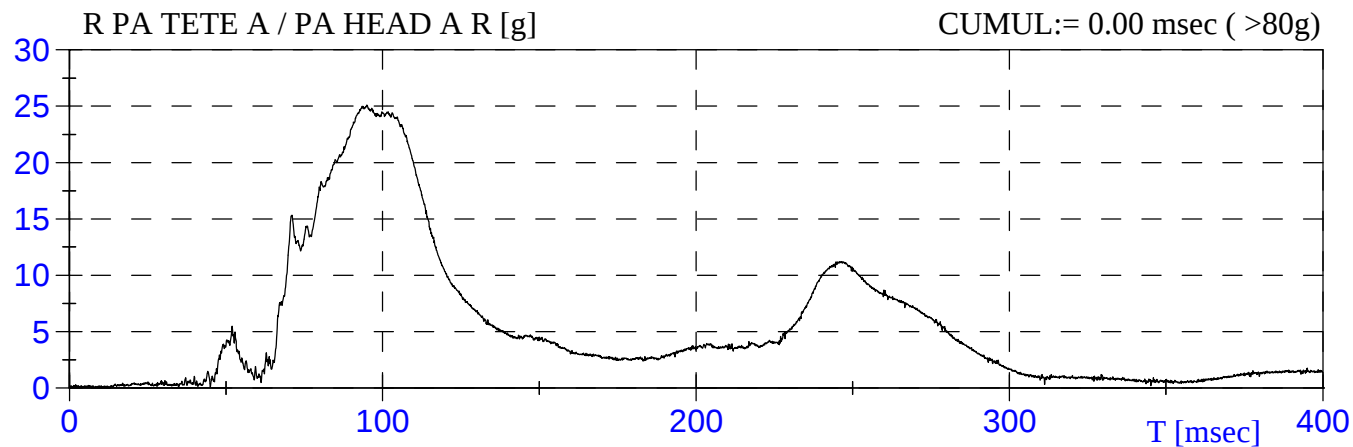
ACCÉLÉRATION DE LA TÊTE >80 g / HEAD ACCELERATION > 80 g



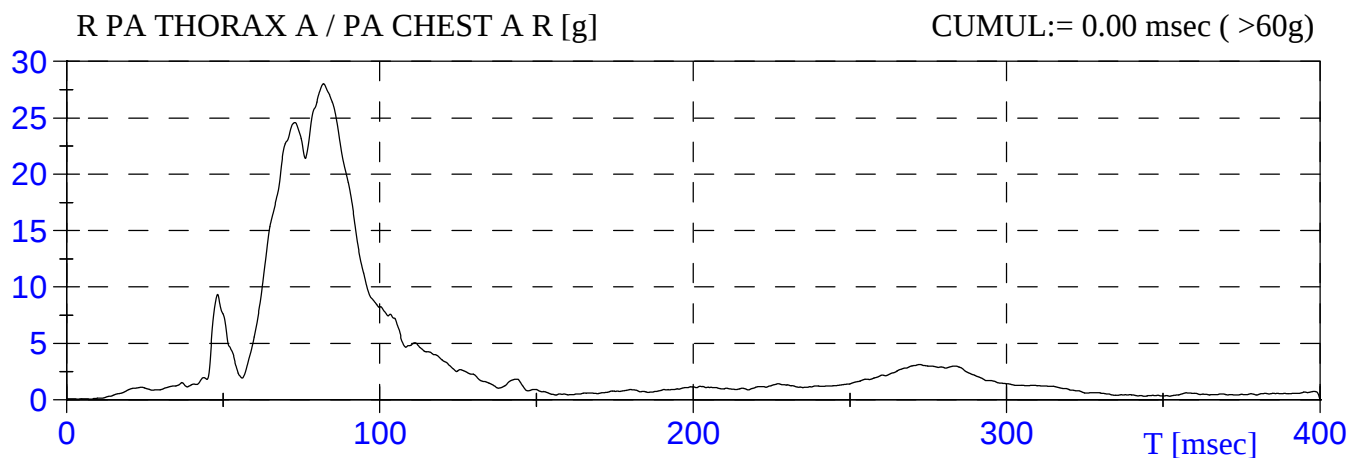
ACCÉLÉRATION DU THORAX >60 g / THORAX ACCELERATION > 60 g



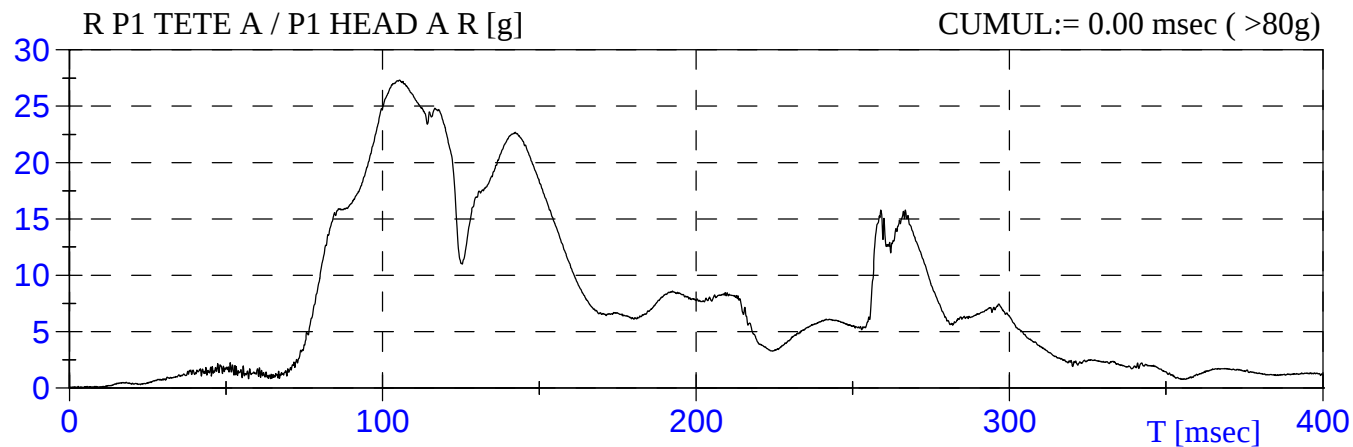
ACCÉLÉRATION DE LA TÊTE >80 g / HEAD ACCELERATION > 80 g



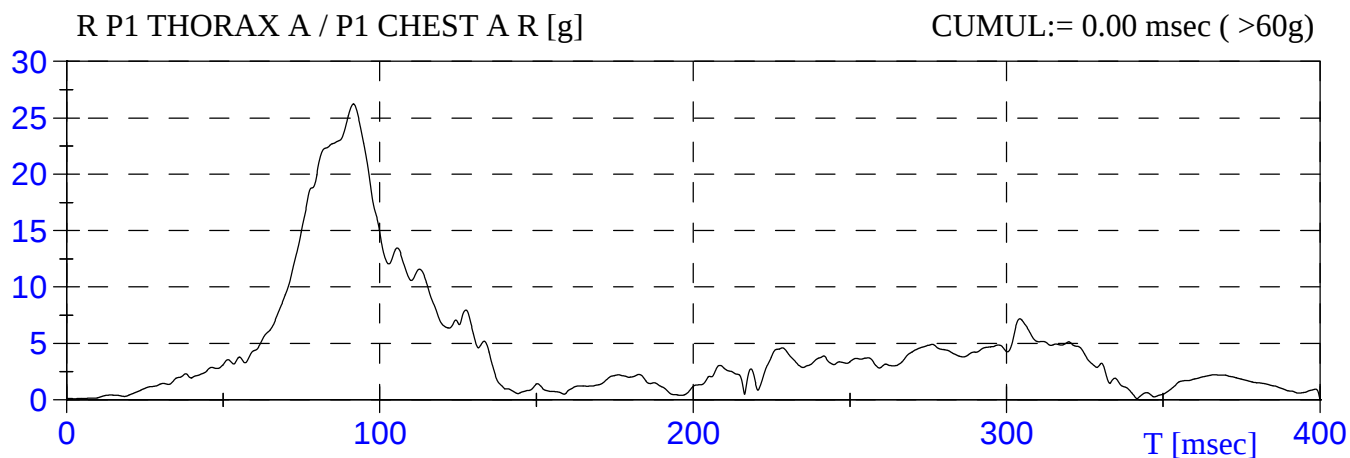
ACCÉLÉRATION DU THORAX >60 g / THORAX ACCELERATION > 60 g



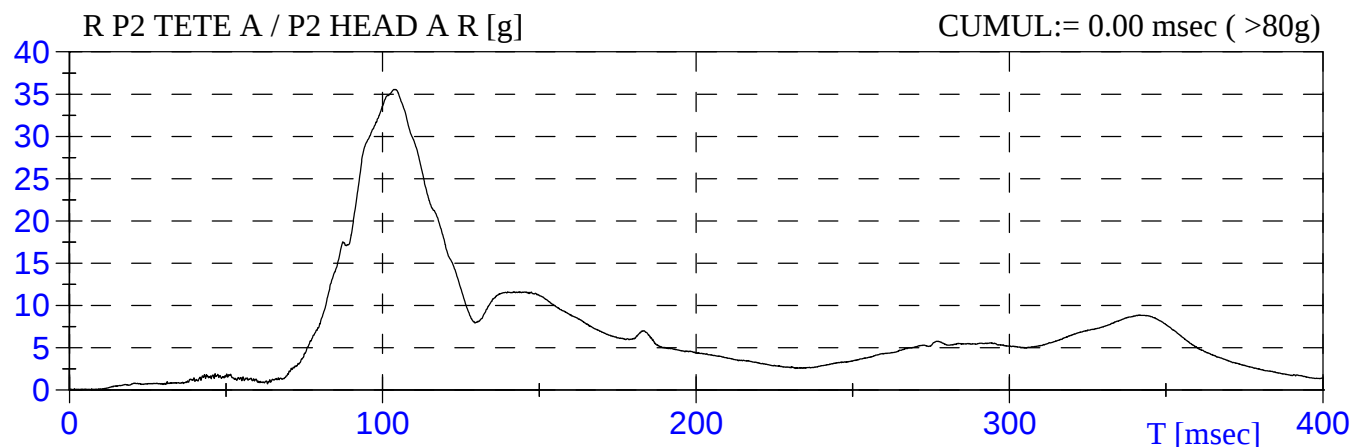
ACCÉLÉRATION DE LA TÊTE >80 g / HEAD ACCELERATION > 80 g



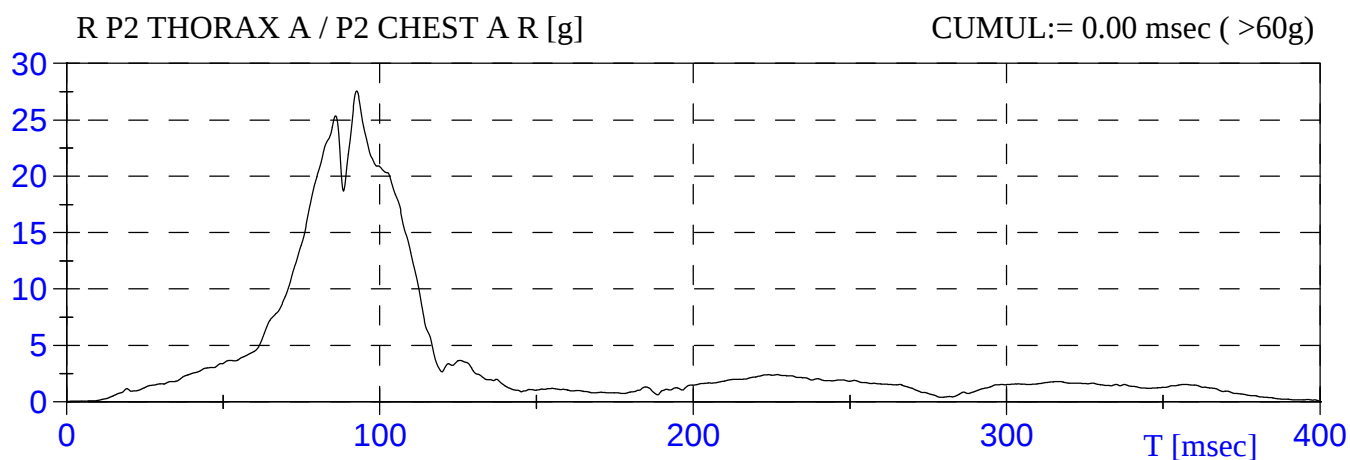
ACCÉLÉRATION DU THORAX >60 g / THORAX ACCELERATION > 60 g



ACCÉLÉRATION DE LA TÊTE >80 g / HEAD ACCELERATION > 80 g



ACCÉLÉRATION DU THORAX >60 g / THORAX ACCELERATION > 60 g



Chauffeur / Driver

$$N_{ij}^* = 0.25$$

Valeurs critiques
Criticals Values

N _{tf}	N _{te}	N _{cf}	N _{ce}	T _c	4287
				C _c	3880
0.25	0.15	0.07	0.07	F _c	155
				E _c	67

Passager / Passenger

$$N_{ij}^* = 0.27$$

Valeurs critiques
Criticals Values

N _{tf}	N _{te}	N _{cf}	N _{ce}	T _c	4287
				C _c	3880
0.27	0.15	0.08	0.15	F _c	155
				E _c	67

* Selon / According To: Federal Register 5/2000