

LOAD CASES - MECAMASTER

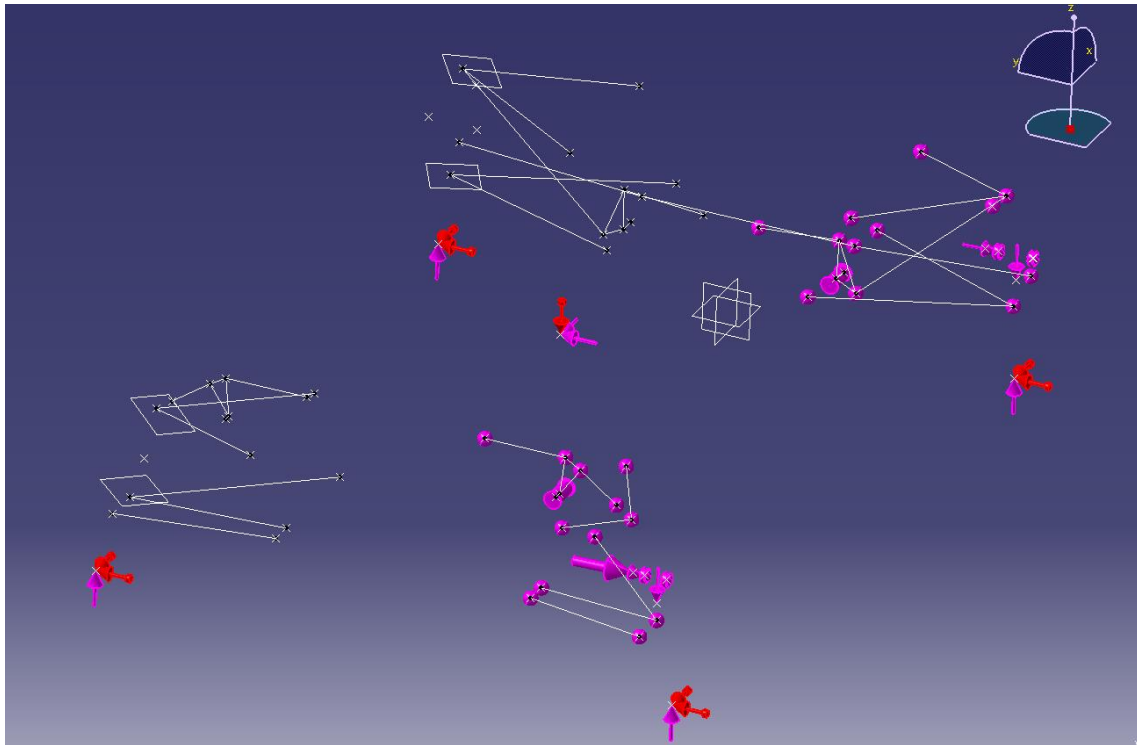


Figure 1: General view of Mecamaster model

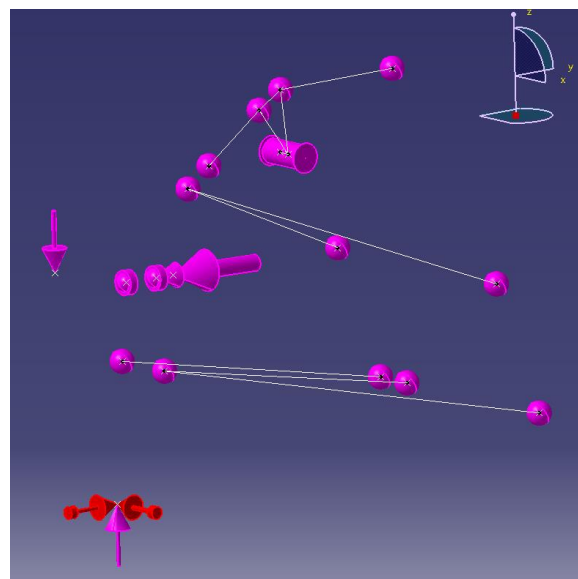


Figure 2: Rear right wheel detail

Hypothesis

LOAD CASE	HYPOTHESIS TO REMOVE THE HYPERSTATISM
Left Turn 2G	Longitudinal plan of symmetry
Right Turn 2G	Longitudinal plan of symmetry
Left Turn 1G + Braking 1G	Rear internal wheel > $F_z=0N$
Right Turn 1G + Braking 1G	Rear internal wheel > $F_z=0N$
Acceleration 0.77G	Lateral plan of symmetry
Braking 2G	Lateral plan of symmetry
Inverse Braking 0.5G	Lateral plan of symmetry
Bump 3G	Lateral plan of symmetry

Examples of results

Part	Acceleration 0.77g (N)	Braking 2g (N)	Left turn 1g + braking 1g (N)	Left turn 2g (N)	Reverse braking 0.5g (N)	Bump 3g (N)
Steering link	12	73	411	860	26	50
Toe link	1286	30	520	1402	207	345
Front pullrod	1104	2723	2542	2730	1265	4669
Rear pushrod	1148	222	1020	1472	1056	2669
Front lower A-Arm, front pivot	53	5827	1973	2090	600	224
Rear lower A-Arm, front pivot	1534	1169	3928	3190	1623	475

	For Rockers		Left Trun 1G + Brake 1G									
	For Frame					N	N	N	N/mm	N/mm	N/mm	
	For Uprights											
	Nom Meca Master	Nom	Type	Part 1	Part 2	Rx	Ry	Rz	Mx	My	Mz	
REAR SUSPENSIO N	BJ_Rear UF	Upper A-arm Front Ball Joint	BJ	rear uf a-arm	frame	1415.798	671.234	-338.721	.000	.000	.000	
	BJ_Rear UR	Upper A-arm Rear Ball Joint	BJ	rear ur a-arm	frame	-632.017	-1684.728	850.155	.000	.000	.000	
	BJ_Rear LR	Lower A-arm Rear Ball Joint	BJ	rear lr a-arm	frame	1088.766	3131.810	-461.009	.000	.000	.000	
	BJ_Rear LF	Lower A-arm Front Ball Joint	BJ	rear lf a-arm	frame	-3022.503	-2482.270	365.395	.000	.000	.000	
	BJ_Rear UF Outboard	N/A	BJ	rr upright	rear uf a-arm	1415.798	671.234	-338.721	.000	.000	.000	
	BJ_Rear UR Outboard	N/A	BJ	rr upright	rear ur a-arm	-632.017	-1684.728	850.155	.000	.000	.000	
	BJ_Rear LR Outboard	N/A	BJ	rr upright	rear lr a-arm	1088.766	3131.810	-461.009	.000	.000	.000	
	BJ_Rear LF Outboard Spherical	N/A	BJ	rr upright	rear lf a-arm	-3022.503	-2482.270	365.395	.000	.000	.000	
	BJ_RR Tie-rod	Inboard Tie-rod Ball Joint	BJ	rr tie-rod	frame	212.456	469.988	-69.183	.000	.000	.000	
	BJ_RR Outboard Tie-rod	Outboard Tie-rod Ball Joint	BJ	rr upright	rr tie-rod	212.456	469.988	-69.183	.000	.000	.000	
	BJ_Lower Push-rod	Lower Push-Rod Ball joint	BJ	rr upright	rr push-rod	.000	831.467	590.863	.000	.000	.000	
	BJ_Upper Push-rod	Upper Push-Rod Ball Joint	BJ	rr push-rod	rr rocker	.000	831.467	590.863	.000	.000	.000	
	BJ_Outboard Shock Spherical	Outboard Shock Ball Joint	BJ	rr rocker	rr ohlins	.000	936.362	2.753	.000	.000	.000	
	BJ_Inboard Shock	Inboard Shock Ball Joint	BJ	rr ohlins	frame	.000	936.362	2.753	.000	.000	.000	
	PI_RR Rocker Pivot	Rocker Pivot	PI	rr rocker	frame	.000	-104.895	588.110	.000	.000	.000	
	PO-Z_Fz - RR	Normal Force on tire	PO	sol	rr wheel	.000	.000	937.500	.000	.000	.000	
	PO-Z_RR Brake Force	Brake Force	PO	rr wheel	rr upright	.000	.000	2424.580	.000	.000	.000	
	SS-XZ_RR Outer Bearing	Radial Force Outer Bearing	SS	rr wheel	rr upright	-1395.926	-204.399	-7848.875	.000	.000	.000	
	SS-XZ_RR Inner Bearing	Radial Force Inner Bearing	SS	rr wheel	rr upright	458.426	168.836	6387.515	.000	.000	.000	
	PO-Y_RR Inner Bearing	Axial Force Bearing	PO	rr wheel	rr upright	.000	973.063	-25.720	.000	.000	.000	
FRONT SUSPENSIO N	BJ_Front UF	Upper A-arm Front Ball Joint	BJ	front uf a-arm	frame	917.449	1168.068	-280.336	.000	.000	.000	
	BJ_Front UR	Upper A-arm Rear Ball Joint	BJ	front ur a-arm	frame	-61.169	158.579	-38.059	.000	.000	.000	
	BJ_Front LR	Lower A-arm Rear Ball Joint	BJ	front lr a-arm	frame	-1185.421	3993.073	-218.092	.000	.000	.000	
	BJ_Front LF	Lower A-arm Front Ball Joint	BJ	front lf a-arm	frame	-953.093	-1725.216	94.227	.000	.000	.000	
	BJ_Front LF Outboard	N/A	BJ	fr upright	front lf a-arm	-953.093	-1725.216	94.227	.000	.000	.000	
	BJ_Front LR Outboard	N/A	BJ	fr upright	front lr a-arm	-1185.421	3993.073	-218.092	.000	.000	.000	
	BJ_Front UR Outboard	N/A	BJ	fr upright	front ur a-arm	-61.169	158.579	-38.059	.000	.000	.000	
	BJ_Front UF Outboard	N/A	BJ	fr upright	front uf a-arm	917.449	1168.068	-280.336	.000	.000	.000	
	BJ_FR Pull-Rod	Outboard Pull-Rod Ball Joint	BJ	fr upright	fr pull-rod	-.229	-1884.333	1706.873	.000	.000	.000	
	BJ_FR Inboard Pull Rod	Inboard Pull-Rod Ball Joint	BJ	fr pull-rod	fr rocker	-.229	-1884.333	1706.873	.000	.000	.000	
	BJ_Outboard FR Ohlins	Outboard Shock Ball Joint	BJ	fr rocker	fr ohlins	.000	1349.509	-103.563	.000	.000	.000	
	BJ_Inboard FR Ohlins	Inboard Shock Ball Joint	BJ	fr ohlins	frame	.000	1349.509	-103.563	.000	.000	.000	
	BJ_Outboard FR Tie-rod	Outboard Tie-rod Ball Joint	BJ	fr upright	fr tie-rod	-17.742	-409.966	35.592	.000	.000	.000	
	BJ_Inboard FR Tie-rod	Inboard Tie-Rod Ball Joint	BJ	fr tie-rod	frame	-17.742	-409.966	35.592	.000	.000	.000	
	PO-Z_Fz - RL	Normal Force on RL Tire	PO	sol	frame	.000	.000	.000	.000	.000	.000	
	PO-Z_Fz-FR	Normal Force on FR Tire	PO	sol	fr wheel	.000	.000	1300.205	.000	.000	.000	
	PO-Z_Fz - FL	Normal Force on FL Tire	PO	sol	frame	.000	.000	762.295	.000	.000	.000	
	SS-XZ_FR Inner bearing	Radial Force Inner Bearing	SS	fr wheel	fr upright	-512.956	203.041	5700.735	.000	.000	.000	
	SS-XZ_FR Outer bearing	Radial Force Outer Bearing	SS	fr wheel	fr upright	-787.249	-274.209	-7698.911	.000	.000	.000	
	PO-Y_FR Wheel Axial Force	Axial Force bearing	PO	fr wheel	fr upright	.000	1371.373	-48.844	.000	.000	.000	
	PO-Z_1	Brake Force	PO	fr wheel	fr upright	.000	.000	3347.224	.000	.000	.000	
	PI_FR Rocker Pivot	Rocker Pivot	PI	fr rocker	frame	-.229	-3233.842	1810.436	.000	4.834	-9.686	
	PO-Y_Force Lat	Force Long.	PO	frame	sol	.000	3000.000	.000	.000	.000	.000	
	PO--X_Force Long	Force Lat.	PO	frame	sol	-3000.000	.000	.000	.000	.000	.000	