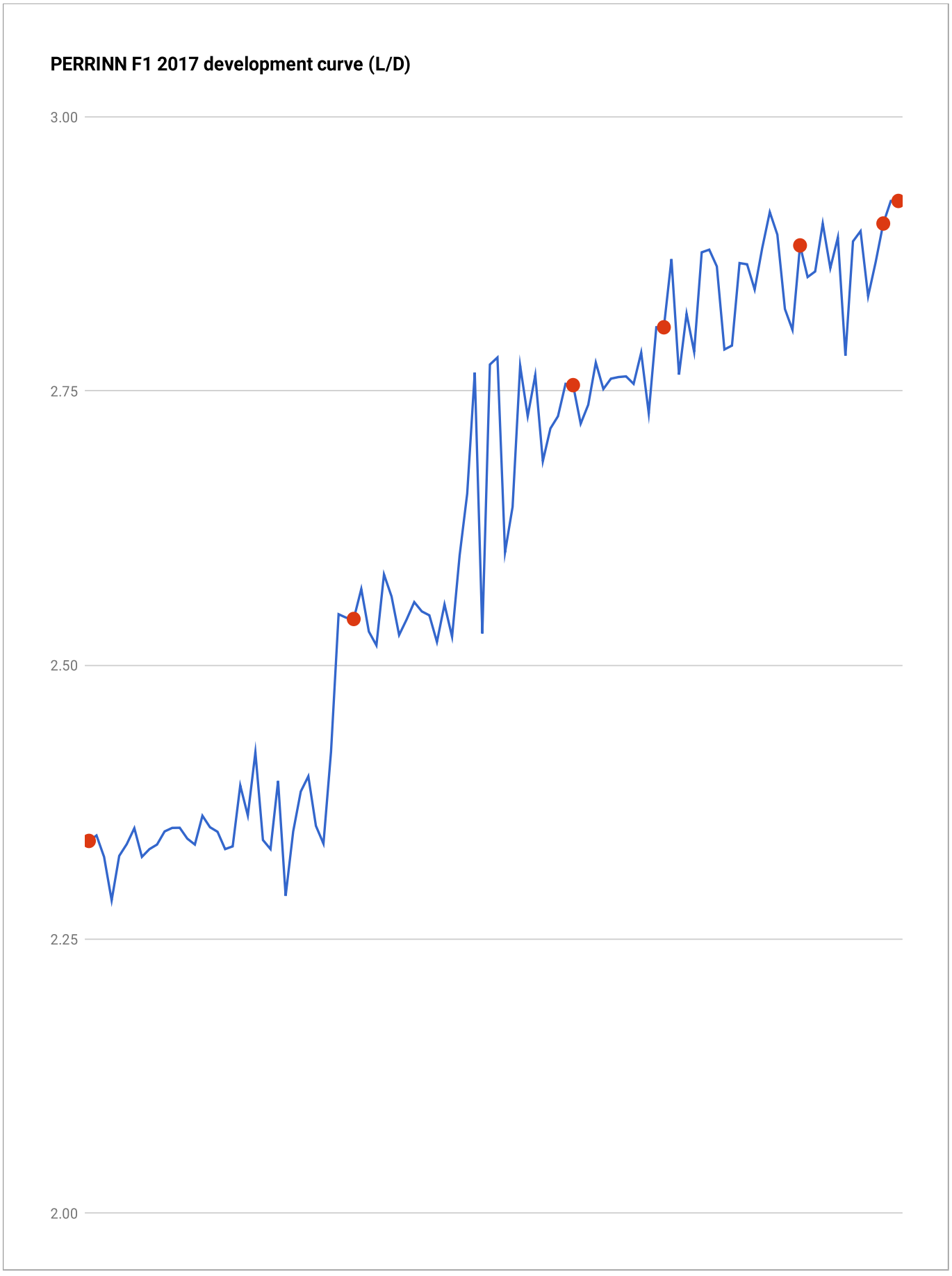
RUN [1]	Date [2]	Description [3]	Product	Version [4]	WB [5]	RH [6	RH [7	Y [8]	S [9]	R [10]	eed [1	rho	Mesh [12]	Mesh [13]	Author	Checked	Solver [14]	SCx [15]	SCz	SCzF	SCzR	L/D [16]	My [17]	%Aero [18]	mdot [19]	Folder [20]			L/D [21]
2405	31-May-2016	brake duct front	F1	V2	3.475	20	50	0.0	0.0	0.0	55	1.225	HALF	55M 3 layers	AS	NP	Fluent	1.04	2.09	0.89	1.20	2.02	7757	42.4%		Folder			
2406	1-Jun-2016	brake duct front	F1	V2	3.475	20	50	0.0	0.0	0.0	50	1.1845	HALF	3M	AK	NP	SimScale OF231	1.28	1.68	0.57	1.11	1.31	5701	33.9%		Folder			
2407	2-Jun-2016	Initial Baseline	F1	V1	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	3.6M	LB	NP	OF 20 [22]	0.91	1.59	0.55	1.04	1.75	5511	34.9%		Folder			
2408	6-Jun-2016	brake duct front	F1	V2	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	4.1M	AZ	NP	SimScale OF231	1.28	1.31	0.39	0.92	1.02	4898	29.7%		Folder			
2409	4-Jun-2016	Initial Baseline	F1	V1	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	33M 5layers	HF	NP	in-house fe32	1.17	2.38	1.04	1.34	2.03	7152	43.5%		Folder			
2410	5-Jun-2016	brake duct front	F1	V2	3.475	20	50	0.0	0.0	0.0	50	1.185	HALF	11.6M	AK	NP	SimScale OF231	1.31	1.73	0.45	1.28	1.32	6586	25.9%		Folder			
2411	13-Jun-2016	GV, BB, RW, RWEP [23]	F1	V4	3.475	20	50	0.0	0.0	0.0	55	1.225	HALF	58M 3 layers	AS	NP	Fluent	0.99	2.16	0.93	1.23	2.18	7904	43.2%		Folder			
2412	25-Jun-2016	GV, BB, RW, RWEP [24]	F1	V5	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	35M 5layers	HF	NP	in-house fe32	1.13	2.31	1.00	1.31	2.04	6995	43.1%		Folder			
2413	10-Jun-2016	GV, BB, RW, RWEP [25]	F1	V4	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	10.4M	AK	NP	SimScale OF231	1.23	1.78	0.42	1.36	1.44	7212	23.7%		Folder			
2414	13-Jun-2016	(2015 fw)	F1	V0	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	19.8M	QF	NP	Star CCM+	1.24	2.07	0.78	1.29	1.67	6860	37.7%		Folder			
2415	20-Jun-2016	rwep thin - rw sgs [26]	F1	V5	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	58m 3 layers	AS	NP	Fluent	1.05	2.33	0.90	1.43	2.22	7612	38.6%		Folder			
2416	20-Jun-2016	rwep thin - rw sgs [27]	F1	V5	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	11.2M	AK	NP	SimScale OF231	1.21	1.78	0.42	1.36	1.47	7214	23.8%		Folder			
2417	15-Jun-2016	GV, BB, RW, RWEP [28]	F1	V4	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	58M 3 layers	AS	NP	Fluent	0.99	2.15	0.92	1.23	2.17	6526	43.0%		Folder			
2418	~~20-Jun-2016~~	~~GV, BB, RW, RWEP [29]~~	~~F1~~	~~V4 [30]~~	~~3.475~~	~~20~~	~~50~~	~~0.0~~	~~0.0~~	~~0.0~~	~~50~~	~~1.225~~	~~HALF~~	~~22.4M~~	~~QF~~	~~NP~~	~~Star CCM+~~	~~1.56~~	~~2.76~~	~~1.13~~	~~1.63~~	~~1.77~~	~~8696~~	~~40.8%~~		~~Folder~~			
2419	24-Jun-2016	GV, BB, RW, RWEP [31]	F1	V5	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	33.8M	QF	NP	Star CCM+	1.22	2.61	1.35	1.26	2.14	6680	51.9%		Folder			
2420	10-Jul-2016	radiators	F1	V6	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	44M 5layers	HF	NP	in-house fe32	1.16	2.45	0.96	1.49	2.11	7907	39.3%	2.41	Folder			
2421	27-Jul-2016	no radiators	F1	V6	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	29M, 2,5 layers	AK		SimScale OF231	1.27	2.28	0.77	1.51	1.79	8026	33.7%		Folder			
2422	28-Jul-2016	incompressible of #2420	F1	V6	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	44M 5layers	HF	NP	in-house fe32	1.16	2.46	0.97	1.49	2.12	7953	39.2%	2.41	Folder			
2423	6-Aug-2016	no radiators of #2422	F1	V6	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	44M 5layers	HF	NP	in-house fe32	1.15	2.51	0.97	1.54	2.18	8208	38.5%	4.78	Folder			
2424	2-Aug-2016	rear barrels	F1	V7	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.77	1.25	1.51	2.34		45.3%	3.14	Folder	0.804	1.881	2.34
2425	2-Aug-2016	diff strakes less camber	F1	B701	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.77	1.25	1.52	2.34		45.2%		Folder	0.804	1.885	
2426	2-Aug-2016	fw strakes off	F1	B702	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.17	2.72	1.24	1.48	2.32		45.6%		Folder	0.797	1.853	
2427	2-Aug-2016	fwep notch	F1	B703	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.71	1.22	1.49	2.29		44.9%		Folder	0.806	1.842	
2428	2-Aug-2016	rw more camber	F1	B704	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.76	1.24	1.52	2.33		45.1%		Folder	0.807	1.877	
2429	2-Aug-2016	rw notch large	F1	B705	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.75	1.25	1.50	2.34		45.4%		Folder	0.802	1.874	
2430	3-Aug-2016	floor penna	F1	B706	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.78	1.27	1.51	2.35		45.8%		Folder	0.803	1.888	
2431	3-Aug-2016	sidpod narrow	F1	B707	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.73	1.23	1.50	2.33		45.0%		Folder	0.8	1.86	
2432	3-Aug-2016	diff profile straighter	F1	B708	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.76	1.25	1.51	2.33		45.3%		Folder	0.804	1.875	
2433	4-Aug-2016	fw y250 trim small	F1	B709	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.76	1.26	1.49	2.34		45.8%		Folder	0.803	1.876	
2434	4-Aug-2016	tv flick	F1	B710	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.79	1.25	1.53	2.35		44.9%		Folder	0.807	1.895	
2435	4-Aug-2016	rw low drag	F1	B711	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.14	2.68	1.25	1.42	2.35		46.7%		Folder	0.774	1.82	
2436	5-Aug-2016	rw camber low	F1	B712	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.78	1.25	1.53	2.35		44.9%		Folder	0.805	1.893	
2437	5-Aug-2016	diff more angle	F1	B713	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.76	1.25	1.51	2.34		45.3%		Folder	0.802	1.878	
2438	4-Aug-2016	sidepod vane ni	F1	B714	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.76	1.24	1.52	2.34		44.9%		Folder	0.803	1.876	
2439	4-Aug-2016	bb fast	F1	B715	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.82	1.28	1.53	2.36		45.6%		Folder	0.811	1.916	
2440	4-Aug-2016	bb small	F1	B716	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.77	1.25	1.52	2.35		45.3%		Folder	0.801	1.884	
2441	5-Aug-2016	bb otb	F1	B717	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.77	1.25	1.52	2.35		45.2%		Folder	0.802	1.883	
2442	5-Aug-2016	tv camber	F1	B718	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.17	2.74	1.25	1.48	2.33		45.7%		Folder	0.798	1.861	
2443	5-Aug-2016	tv camber and flick	F1	B718a	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.17	2.74	1.26	1.48	2.33		45.8%		Folder	0.798	1.863	
2444	5-Aug-2016	bb fast and small	F1	B719	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.85	1.29	1.56	2.39		45.2%		Folder	0.81	1.936	
2445	5-Aug-2016	bb very fast and small	F1	B720	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.20	2.83	1.29	1.55	2.36		45.4%		Folder	0.816	1.928	
2446	5-Aug-2016	bb fast / small and penna	F1	B721	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.86	1.32	1.54	2.42		46.1%		Folder	0.804	1.946	
2447	5-Aug-2016	rw connectors nd	F1	B722	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.77	1.25	1.52	2.34		45.1%		Folder	0.805	1.884	
2448	5-Aug-2016	rr barrel wings	F1	B723	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.78	1.25	1.53	2.33		45.0%		Folder	0.81	1.889	
2449	5-Aug-2016	fw foot ibd trim	F1	B724	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.83	1.30	1.53	2.39		45.9%		Folder	0.804	1.925	
2450	5-Aug-2016	fw vanes ni	F1	B725	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.73	1.21	1.52	2.29		44.3%		Folder	0.812	1.859	
2451	6-Aug-2016	diff strakes ibd trim	F1	B726	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.78	1.25	1.52	2.35		45.1%		Folder	0.804	1.888	
2452	8-Aug-2016	tv camber and flick no	F1	B727	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.17	2.78	1.23	1.55	2.38		44.1%		Folder	0.793	1.891	
2453	7-Aug-2016	bb fast/small/obd and penna	F1	B728	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.19	2.85	1.31	1.54	2.40		46.0%		Folder	0.808	1.938	
2454	7-Aug-2016	diff strakes ibd trim / no	F1	B729	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.77	1.25	1.52	2.35		45.2%		Folder	0.801	1.885	
2455	7-Aug-2016	diff strakes trim / no	F1	B730	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.18	2.75	1.25	1.50	2.34		45.5%		Folder	0.801	1.872	
2456	7-Aug-2016	rw main plane short	F1	B731	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	2.95	1.25	1.71	2.42		42.2%		Folder	0.829	2.007	
2457	8-Aug-2016	B721/B724/B729/B731	F1	combo	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.11	1.36	1.75	2.55		43.8%		Folder	0.831	2.116	
2458	8-Aug-2016	previous and B727	F1	combo	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.16	1.32	1.84	2.54		41.9%		Folder	0.845	2.149	
2459	9-Aug-2016	B721/B724/B729/B731/B727	F1	V8	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.16	1.32	1.83	2.54		41.9%		Folder	0.845	2.148	2.54
2460	9-Aug-2016	penna large	F1	B801	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.13	1.36	1.77	2.57		43.4%		Folder	0.829	2.13	
2461	9-Aug-2016	bb small	F1	B802	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.11	1.32	1.79	2.53		42.4%		Folder	0.835	2.113	
2462	9-Aug-2016	fw y200 nd	F1	B803	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.09	1.34	1.76	2.52		43.2%		Folder	0.836	2.105	
2463	9-Aug-2016	diff wide	F1	B804	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.19	1.33	1.86	2.58		41.7%		Folder	0.841	2.172	
2464	10-Aug-2016	diff wide / fence obd	F1	B805	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.16	1.33	1.83	2.56		42.1%		Folder	0.839	2.15	
2465	10-Aug-2016	penna small	F1	B806	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.12	1.30	1.82	2.53		41.7%		Folder	0.84	2.123	
2466	10-Aug-2016	tv fliick large	F1	B807	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.14	1.33	1.81	2.54		42.3%		Folder	0.84	2.135	
2467	10-Aug-2016	bb ni	F1	B808	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.14	1.33	1.81	2.56		42.4%		Folder	0.836	2.138	
2468	10-Aug-2016	sidepod vane lc no	F1	B809	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.14	1.34	1.80	2.55		42.7%		Folder	0.838	2.136	
2469	11-Aug-2016	fw obd profile no	F1	B810	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.18	1.38	1.80	2.55		43.3%		Folder	0.849	2.161	
2470	11-Aug-2016	fw gy	F1	B811	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.08	1.31	1.77	2.52		42.5%		Folder	0.831	2.095	
2471	11-Aug-2016	rw gy 5mm	F1	B812	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.13	1.33	1.80	2.56		42.5%		Folder	0.832	2.126	
2472	11-Aug-2016	fw profile extended	F1	B813	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.09	1.31	1.78	2.53		42.4%		Folder	0.833	2.104	
2473	11-Aug-2016	fw strakes x4	F1	B814	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.23	1.43	1.80	2.60		44.3%		Folder	0.845	2.197	
2474	11-Aug-2016	diff wide and spat trim	F1	B815	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.26	1.34	1.92	2.66		41.2%		Folder	0.835	2.218	
2475	12-Aug-2016	B810/B814/B815	F1	B816	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.44	1.51	1.93	2.77		44.0%		Folder	0.845	2.338	
2476	12-Aug-2016	B810/B814/B815 / B723 barrels	F1	B817	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.28	3.23	1.47	1.76	2.53		45.4%		Folder	0.868	2.195	
2477	12-Aug-2016	B810/B814/B815 / B818 fence obd	F1	B818	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.47	1.51	1.96	2.77		43.5%		Folder	0.85	2.358	
2478	12-Aug-2016	B810/B814/B815 / V8 barrels	F1	B819	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.45	1.49	1.96	2.78		43.2%		Folder	0.843	2.344	
2479	12-Aug-2016	B810/B814/B815 / B820 barrels	F1	B820	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.26	1.47	1.78	2.60		45.3%		Folder	0.851	2.215	
2480	13-Aug-2016	B810/B814/B815 / B821 barrels	F1	B821	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.30	1.49	1.81	2.64		45.1%		Folder	0.849	2.245	
2481	13-Aug-2016	B818/B819	F1	B822	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.45	1.50	1.95	2.77		43.5%		Folder	0.846	2.346	
2482	17-Aug-2016	B822 / B824c barrels (3 wings)	F1	B824c	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.39	1.50	1.89	2.73		44.3%		Folder	0.846	2.307	
2483	16-Aug-2016	B822 / B825b barrels (2 wings)	F1	B825b	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.43	1.50	1.94	2.76		43.6%		Folder	0.845	2.336	
2484	19-Aug-2016	B822 / B824d barrels (3 wings)	F1	B824d	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.34	1.50	1.85	2.69		44.8%		Folder	0.847	2.275	
2485	19-Aug-2016	B822 / B825d barrels (2 wings)	F1	B825d	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.39	1.51	1.88	2.72		44.5%		Folder	0.848	2.303	
2486	20-Aug-2016	B822 / B824e barrels (3 wings)	F1	B824e	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.39	1.50	1.89	2.73		44.3%		Folder	0.846	2.307	
2487	20-Aug-2016	B822 / B825e barrels (2 wings)	F1	B825e	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.43	1.51	1.92	2.76		44.0%		Folder	0.846	2.332	
2488	21-Aug-2016		F1	V9	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.43	1.50	1.92	2.76		43.9%		Folder	0.846	2.331	2.76
2489	21-Aug-2016	intake vanes ni	F1	B901	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.26	3.41	1.48	1.93	2.72		43.5%		Folder	0.854	2.323	
2490	21-Aug-2016	fw top vanes ibd	F1	B902	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.43	1.51	1.93	2.74		43.9%		Folder	0.853	2.335	
2491	21-Aug-2016	intake vanes no	F1	B903	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.42	1.52	1.91	2.78		44.3%		Folder	0.839	2.329	
2492	22-Aug-2016	rw low camber	F1	B904	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.42	1.51	1.92	2.75		44.0%		Folder	0.846	2.328	
2493	22-Aug-2016	tv wings ibd	F1	B905	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.43	1.51	1.92	2.76		44.0%		Folder	0.846	2.336	
2494	22-Aug-2016	floor top fence obd	F1	B906	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.25	3.44	1.50	1.93	2.76		43.8%		Folder	0.847	2.34	
2495	24-Aug-2016	barrel ft split	F1	B907	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.43	1.51	1.92	2.76		43.9%		Folder	0.845	2.335	
2496	23-Aug-2016	penna fence	F1	B908	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.43	1.51	1.92	2.76		43.9%		Folder	0.846	2.332	
2497	24-Aug-2016	fw top vanes obd	F1	B909	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.45	1.51	1.93	2.79		43.9%		Folder	0.842	2.345	
2498	24-Aug-2016	fw top vanes obd v2	F1	B910	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.38	1.48	1.90	2.73		43.9%		Folder	0.843	2.301	
2499	25-Aug-2016	B903/B905/B906/B907/B909	F1	B911	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.46	1.53	1.93	2.81		44.3%		Folder	0.839	2.356	
2500	26-Aug-2016		F1	V10	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.46	1.53	1.93	2.81		44.3%		Folder	0.839	2.356	2.81
2501	27-Aug-2016	bb 2 levels	F1	B1001	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.51	1.56	1.96	2.87		44.3%		Folder	0.833	2.391	
2502	27-Aug-2016	diff fence obd short	F1	B1002	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.41	1.53	1.88	2.76		44.8%		Folder	0.838	2.317	
2503	29-Aug-2016	diff boat more expension	F1	B1007	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.49	1.53	1.95	2.82		44.0%		Folder	0.841	2.372	
2504	29-Aug-2016	fw top vanes united - original barrels	F1	B1003	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.44	1.54	1.90	2.79		44.7%		Folder	0.84	2.34	
2505	29-Aug-2016	floor edge flick long - original barrels	F1	B1004	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.56	1.56	2.00	2.88		43.9%		Folder	0.842	2.422	
2506	29-Aug-2016	bb 2 levels more top angle - original barrels	F1	B1005	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.53	1.54	1.99	2.88		43.6%		Folder	0.834	2.401	
2507	29-Aug-2016	bb 2 levels more top notch - original barrels	F1	B1006	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.52	1.52	2.00	2.86		43.1%		Folder	0.836	2.394	
2508	29-Aug-2016	original barrels	F1		3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.44	1.52	1.91	2.79		44.3%		Folder	0.839	2.339	
2509	29-Aug-2016	fw top vanes united - original front barrels	F1	B1003	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.44	1.53	1.91	2.79		44.5%		Folder	0.839	2.342	
2510	29-Aug-2016	floor edge flick long - original front barrels	F1	B1004	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.54	1.58	1.96	2.87		44.5%		Folder	0.84	2.408	
2511	29-Aug-2016	bb 2 levels more top angle - original front barrels	F1	B1005	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.51	1.55	1.96	2.87		44.1%		Folder	0.833	2.387	
2512	31-Aug-2016	bb 2 levels more top notch - original front barrels	F1	B1006	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.48	1.53	1.95	2.84		43.9%		Folder	0.832	2.365	
2513	31-Aug-2016	B1004/B1005/B1007 (ft barrels short)	F1	B1009	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.54	1.57	1.97	2.88		44.4%		Folder	0.836	2.408	

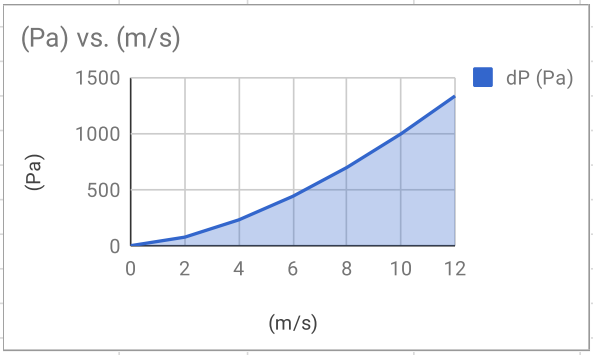
RUN [1]	Date [2]	Description [3]	Product	Version [4]	WB [5]	RH [6]	RH [7]	Y [8]	S [9]	R [10]	eed [1	rho	Mesh [12]	Mesh [13]	Author	Checked	Solver [14]	SCx [15]	SCz	SCzF	SCzR	L/D [16]	My [17]	%Aero [18]	mdot [19]	Folder [20]			L/D [21]
2514	31-Aug-2016	B1004/B1005/B1007 - original barrels	F1	B1008	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.60	1.57	2.03	2.91		43.7%		Folder	0.841	2.45	
2515	31-Aug-2016	B1004/B1005/B1007 - original front barrels	F1	B1008	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.56	1.58	1.98	2.89		44.4%		Folder	0.838	2.424	
2516	31-Aug-2016	original front barrels	F1		3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.48	1.53	1.95	2.82		44.0%		Folder	0.839	2.37	
2517	01-sept-16	ft barrels short	F1		3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.46	1.53	1.93	2.81		44.2%		Folder	0.839	2.354	
2518	01-sept-16		F1	V11	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.54	1.57	1.97	2.88		44.4%		Folder	0.836	2.41	2.88
2519	06-sept-16	bb fast	F1	B1101	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.53	1.57	1.96	2.85		44.5%		Folder	0.842	2.403	
2520	06-sept-16	spat trim	F1	B1102	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.52	1.57	1.95	2.86		44.6%		Folder	0.837	2.393	
2521	06-sept-16	fv more camber	F1	B1103	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.55	1.59	1.97	2.90		44.7%		Folder	0.833	2.418	
2522	06-sept-16	fw tunnel obd	F1	B1104	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.24	3.54	1.54	2.00	2.86		43.5%		Folder	0.841	2.407	
2523	07-sept-16	diff additional strake	F1	B1105	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.56	1.58	1.97	2.89		44.5%		Folder	0.837	2.419	
2524	07-sept-16	fw tunnel ibd	F1	B1106	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.44	1.48	1.96	2.78		43.0%		Folder	0.84	2.337	
2525	08-sept-16	floor curl long	F1	B1107	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.55	1.58	1.97	2.89		44.5%		Folder	0.837	2.416	
2526	07-sept-16	B1103/B1105	F1		3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.55	1.59	1.96	2.90		44.8%		Folder	0.835	2.418	
2527	09-sept-16	Diffuser wide	F1	B1108	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.49	1.57	1.92	2.84		45.1%		Folder	0.837	2.374	
2528	12-sept-16	Nose short	F1	B1109	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.54	1.55	1.99	2.87		43.9%		Folder	0.839	2.406	
2529	15-sept-16		F1	V12	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.22	3.55	1.59	1.97	2.90		44.7%		Folder	0.833	2.418	2.90
2530	29-sept-16	FIA box correction	F1	B1201	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.59	1.61	1.98	2.92		44.8%		Folder	0.835	2.441	
2531	29-sept-16	FIA box correction	F1	V13	3.475	20	50	0.0	0.0	0.0	50	1.225	HALF	20M	NP	NP	Bramble OF	1.23	3.59	1.61	1.98	2.92		44.8%		Folder	0.835	2.441	2.92


PERRINN F1 2017 development curve (L/D)
3.00
2.75
2.50
2.25
2.00

RADIATORS

Main radiator pressure drop characteristic

Quadratic coeficient	1.6
Linear coeficient	25
Velocity	**dP**
(m/s)	**(Pa)**
0	0
2	76
4	230
6	440
8	696
10	995
12	1332



Porous model coeffs for OF — Link

MESH

Mesh size for HALF CAR model (typical)	25M	
Surface mesh size (typical in mm):		
bodywork, engine bay, WAKEFLOOR (refinement box designed in Onshape)	6.25mm	level 8
underfloor, wings, tyre	3.125mm	level 9
wing trailing edges, turning vanes, fence edges, tyre contact patch	1.5625mm	level 10
Surface layer thickness (typical in mm)	0.4mm	
Number of surface layer mesh:		
engine bay, wheel rim (all other areas where flow is not attached)	0	
bodywork, underfloor, tyre	2	
wings, ground, tyre contact patch	5	

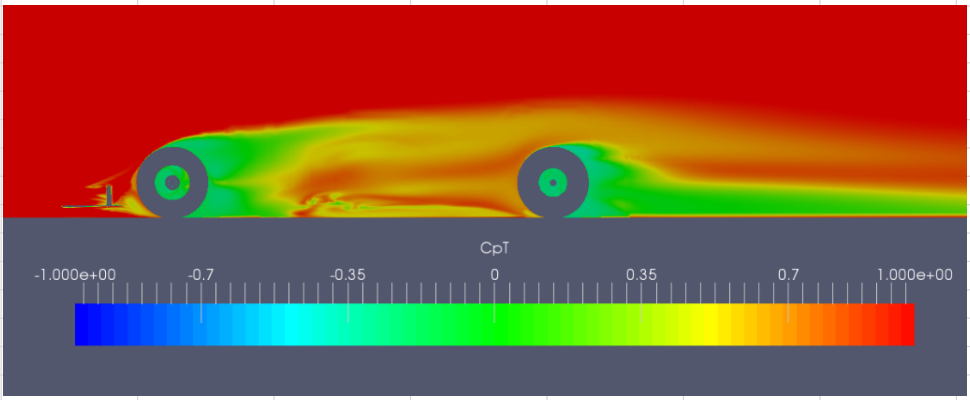
SOLVE

Number of iterations (typical)	2500
Convergence needs to be checked by ploting downforce (Fz) - variation should be less than 2% over last 500 iterations	

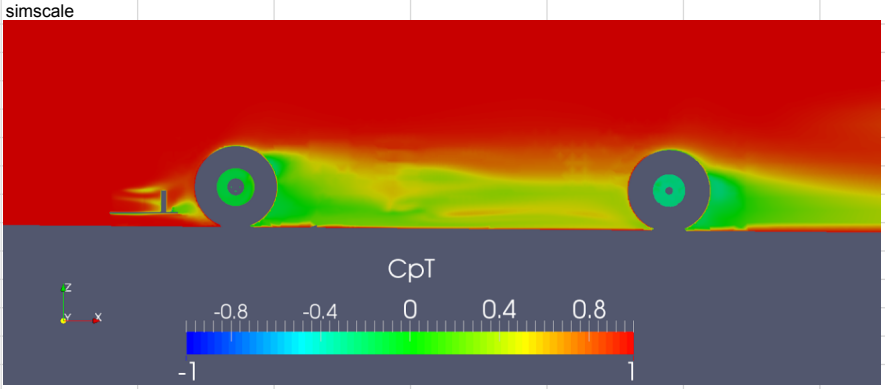
POSTPRO

number of iterations for averaging results	500
Cp images:	
output complete car surface	
maximum zoom keeping full car in window	
scale	[-2;+1]
views	bottom, top, front, back, side
CpT images:	
output slices in X and Y direction	
maximum zoom keeping full car in window	
scale	[-1;+1]
offsets	every 100mm

in house FOAM



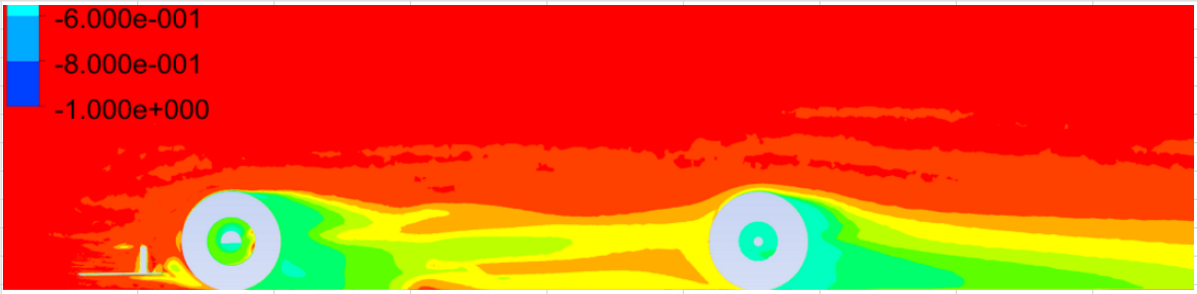
simscale



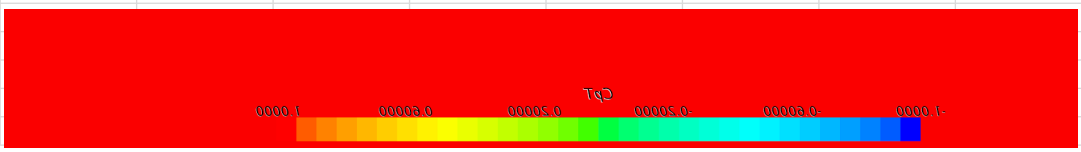
Seperation point on top of the tire is much later than other runs

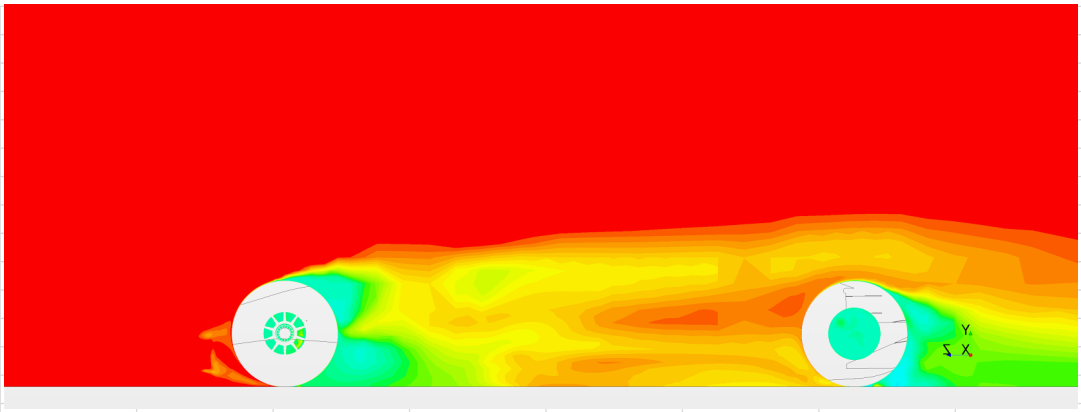
TotalSim RUN2404 (F1 2016)

fluent



star




Y
X
Z

Incompressible Steady-State	Priority (high -> low)									
Solver Type	SIMPLEC	SIMPLE						tested	- tested (correlation problems)	
Turbulence Model	realizableKE	kOmegaSST-CC	kOmegaSST	k-epsilon					- available in SSC	
grad(p)	leastSquares	linear							- available in OF231	
grad(U)	leastSquares	linear							- available in OF30	
div(phi,U)	linearUpwindV	GammaV	limitedLinear	vanLeer	bounded upwind				- available in fe32	
div(phi,k)	linearUpwind	Gamma	limitedLinear	vanLeer	bounded upwind				- other	
div(phi,omega)	linearUpwind	Gamma	limitedLinear	vanLeer	bounded upwind					
div(phi,epsilon)	linearUpwind	Gamma	limitedLinear	vanLeer	bounded upwind					
div((nuEff*dev(T(grad(U)))))	linear									
laplacian(nu,U)	linear corrected									
laplacian(nuEff,U)	linear corrected									
aplacian((1|A(U)),p)	linear corrected									
Interpolation scheme for default	linear									
Surface-normal gradient scheme for default	corrected									

[1] do not modify

[2] put the date at which the run with all postpro is completed

[3] change relative to previous baseline

[4] Onshape model version

[5] front ride height in mm

[6] front ride height in mm

[7] rear ride height in mm

[8] yaw in deg

[9] steer in deg

[10] roll in deg

[11] m/s

[12] HALF or FULL car mesh

[13] mesh size example 25M

[14] STAR or FLUENT or FOAM or FLOW etc...

[15] SCx = Force / (0.5*rho*V2)

Force in N (sum of pressure and viscous forces)
rho in kg/m3
V in m/s

[16] L/D = SCz / SCx

[17] Total moment about origin in NM for full car (enter as positive number)

[18] %Aero = SCzF / SCz

[19] Radiator mass flow
in kg/s

[20] Add link to a PUBLIC folder containing all Cp and CpT plots

[21] L/D = SCz / SCx

[22] to be replaced with SimScale data - Luca

[23] guide vane, barge board, rear wing, rear wing end plate

[24] guide vane, barge board, rear wing, rear wing end plate

[25] guide vane, barge board, rear wing, rear wing end plate

[26] rear wing end plate thin

rear wing slot gap seperator

[27] rear wing end plate thin
rear wing slot gap seperator

[28] guide vane, barge board, rear wing, rear wing end plate

[29] guide vane, barge board, rear wing, rear wing end plate

[30] V5 with V4 rear wing end plate - will call it V4 then...

[31] guide vane, barge board, rear wing, rear wing end plate