Annexe A: List of TrioCFD PRM files

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Laminar Flow							
Channel_lam_pressure_drop	Pb_hydraulique	VDF VEF	3	160 hexa 1920 tetra	21	Convection schemes - Periodic BC fluid : helium	old format
Cir_Cyl_Re100	Pb_hydraulique	VEF	2	9668 triang.	2	Explicit Euler with implicit diffusion - literature comparison	new format report
ConvergenceTaylorGreen	Pb_hydraulique	VEF	2	4 ⇒ 256 to 16384 triang.	20	Convergence for different meshes and convection scheme	old format
ConvergenceTaylorGreen WithDiffusion	Pb_hydraulique	VEF	2	3 ⇒ 256 to 4096 triang.	54	Convergence for different meshes and time scheme	old format
DirectionalPressureLoss	Pb_hydraulique	VEF	3	3 ⇒ 1152, 9216 and 73728 tetra	6	Validation of 64 bits integers possibility to configure	old format
FVCA_test_EF_stab	Pb_hydraulique	VEF	3	7 ⇒ 27 to 1728 tetra	70	Convergence orders of the EF_stab convection schemes	old format
FVCAB_Cas_2.2_3D_steady _Stokes_Taylor_Green_vortex	Pb_hydraulique	VEF VDF	3	7 ⇒ 215 to 61052 tetra 5 ⇒ 8 to 32768 hexa	12	3D Taylor-Green vortex FVCAB experiments	old format
Lid_driven_cavity	Pb_hydraulique	VEF	2	105724 triang.	1	**Implicit Euler steady scheme** comparison with litterature	new format report
Poiseuilleperio2D	Pb_hydraulique	VEF	2	6 ⇒ 6, 24, 96 384, 1536, 6144 triang.	18	Poiseuille comparisons: EF_stab versus Amont schemes	old format
PoiseuillePerio2DVEF _prismes	Pb_hydraulique	VEF	3	2785 triang.	2	EF_stab versus Amont schemes with an ICEM generated VEF mesh	old format
PoiseuillePerio2DVEF _fNcells	Pb_hydraulique	VEF	2	8 ⇒ 6 to 98304 triang.	20	EF_stab versus Amont schemes with different mesh sizes	old format
PoiseuillePerio2DVEF _fNcells_prismes	Pb_hydraulique	VEF	2	2785 triang.	3	EF_stab versus Amont schemes with an ICEM generated VEF mesh	old format

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Laminar Flow							
PoiseuillePerio2DVEF _fNcells_trianfin	Pb_hydraulique	VEF VEF	2	6 ⇒ 6 to 24576 triang.	20	Convection schemes comparison mesh created using trianguler_fin	old format
Poiseuille_flow_2D _VDF_VEF	Pb_hydraulique	VDF VEF	2	200 rect. 400 triang.	5	Validation of the incompressible laminar module with analytical solution	new format report
PoiseuilleInOutVDFVEF	Pb_hydraulique	VDF VEF	2	600 rect. 1200 triang.	10	Hydraulic with pressure drop	old format
PoiseuilleInOut2DVDFVEF _trianfin	Pb_hydraulique	VDF VEF	2	600 rect. 4800 triang.	10	Hydraulic with pressure drop mesh created using trianguler_fin	old format
PoiseuilleInOut2DVDFVEF _prismes	Pb_hydraulique	VDF VEF	2	600 rect. 3474 triang.	10	Hydraulic with pressure drop ICEM generated VEF mesh	old format
poiseuille_3D	Pb_hydraulique	VEF	3	17360 tetra.	5	Hydraulic with pressure drop comparison of 2 convection schemes	old format
PoiseuillePerio3DVDFVEF _fRe	Pb_hydraulique	VDF VEF	3	160 hexa. 1920 tetra.	28	Validation of convection and time schemes Tetraedrisation for VEF discretization	old format
PoiseuillePerio3DVDFVEF _fRe_tetrafin	Pb_hydraulique	VDF VEF	3	160 hexa. 15360 tetra	28	VEF mesh is created using tetraedriser _homogene_fin - improved results	old format
PoiseuillePerio3DVDFVEF _fRe_prismes	Pb_hydraulique	VDF VEF	3	160 hexa. 29313 tetra.	28	Same as previous with VEF mesh generated with ICEM	old format
Poiseuille_Pipe_Velocity	Pb_hydraulique	VEF	3	126560 tetra	4	Validation of different convection schemes	old format
Diagonale_Cube	**Pb_hydraulique _concentration**	VEF	3	192000 tetra.	5	Convection schemes recommandations for 3D scalar passive transport	old format
test_div_grad_Prep1b	Pb_hydraulique	VEF	2	1324 tri	5	Laminar flow through a plane channel coding verification	old format
Mixing_Bidim_Axi	**Pb_hydraulique _concentration**	VDF	2 Axi	5 ⇒ 5784 to 1439232 rect.	5	Comparison of the dispersion coefficient with experimental for different meshes	old format

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Laminar Flow							
Turbulence_synthetique	Pb_hydraulique	VDF	3	1024 to 65536 hexa	15	Generation of isotropic synthetic	new format
		VEF		6144 to 16777216 hexa	8	fluctuations as inlet boundary condition	
Vorticite_et_fonction	Pb_hydraulique	VDF	2	7 ⇒ 16 to 65536 rect	40	Verification of vorticity and	old format
_de_Courant	**Pb_conduction**	VEF		7 ⇒ 16 to 65536 quad		Stream function in a square cavity	
		VEF		6 ⇒ 40 to 104420 tri			
2D_VEF_Cylindre	Pb_hydraulique	VEF	2	999 tri	1	**Implicit_Euler_steady_scheme**	old format
_steady						**Numerical Test**	
Navier_Stokes_2d	Pb_hydraulique	VEF	2	104420 tri.	8	**Implicit_Euler_steady_scheme**	old format
_steady						**Numerical**: comparison with analytical	
Navier_Stokes_3d	Pb_hydraulique	VEF	3	61052 tetra	3	**Implicit_Euler_steady_scheme**	old format
_steady						**Numerical**: comparison with analytical	
NoFlow	Pb_hydraulique	VEF	2	3 ⇒ 242, 1054	24	**Validation of the $P_0 - RT$ scheme**	old format
		P0 RT		& 4262 tri.		in case of a $\vec{u} = 0$	
StatVortex2D	Pb_hydraulique	VEF	2	3 ⇒ 242, 1054	24	**Validation of the $P_0 - RT$ scheme**	old format
		P0 RT		& 4262 tri.		for a steady state 2D vortex	
StatVortex	Pb_hydraulique	VEF	3	4 ⇒ 215	40	**Validation of the $P_0 - RT$ scheme**	old format
		P0 RT		to 7711 tetra		for a steady state 3D vortex	
RotFlow	Pb_hydraulique	VEF	2	3 ⇒ 242, 1054	24	**Validation of the $P_0 - RT$ scheme**	old format
		P0 RT		& 4262 tri.		for a rotational velocity	
Thermal Laminar Flow							
Convection_Vahl_Davis	Pb_thermohydraulique	VDF	2	4761 rect	10	Validation of the coupling between flow	new format
		VEF		1444 & 6084 tri		and thermics in laminar condition	report
VAHL_DAVIS_impl	Pb_thermohydraulique	VDF	2	10000 rect	22	Comparison of velocity and temperature	old format
		VEF		6400 tri		profiles using explicit or implicit algo	

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Thermal Laminar Flow							
Convection_Rotating _Table	Pb_thermohydraulique	VEF	2	6130 tri	28	Laminar advection of temperature fields on a circular rotating table	old format
therm_stratif _water_tank	Pb_thermohydraulique	VDF VDF VEF VEF	2 3 2 3	39402 rect 86246 hexa 18816 tri 86400 tetra	2 2 2 2	Vertical flat heated plate immersed in pool of water open to atmosphere	old format
PorousWithPLoss _VEF	Pb_thermohydraulique	VEF VEF	2 3	84 tri 486 tetra	4	Laminar flow in a channel with porous media and pressure loss	old format
Oscillating_Flow	Pb_thermohydraulique	VDF VEF	2	2500 rect 5040 tri	5	Natural convection inside a rectangular heated cavity	new format report
Pb_couple_2D	Pb_thermohydraulique **Pb_conduction**	VDF VEF	2	36 rect 64 tri	2	Laminar heat exchange through a plane channel with wall conduction	old format
ThHyd_3D_VEF _steady	Pb_thermohydraulique	VEF	3	1270 tetra	1	**Implicit_Euler_steady_scheme Numerical Test**	old format
Radiation	Pb_Thermohydraulique **Pb_conduction** **Pb_Couple_Rayonnement**	VDF VEF VDF VEF VDF	2 2 3 3 Axi	20+25 and 100 rect 80+40 and 1600 tri 100+125 and 125 hexa 1958+1220 to 5884 tetra 100 rect	10	Coupling between radiation, Conduction and natural convection inside a 2D or 3D channel **Radiation in transparent medium Pb_Couple_Rayonnement**	old format
Turbulent Flow							
Backward_Facing _Step_impl	Pb_hydraulique_Turbulent	VEF	2	2944 tri	11	Turbulent channel air flow with backward step - $\kappa - \epsilon$ + loi_standard_hydr	old format
Backward_Facing _Step_3D	Pb_hydraulique_Turbulent	VDF VEF	3	28620 rect 366230 tri	2	Turbulent channel air flow with backward step - $\kappa - \epsilon$ + loi_standard_hydr	old format
Backward_Facing _Step	Pb_hydraulique_Turbulent	VDF VEF	2	3228 rect 2944 tri	6	$\kappa - \epsilon$ + loi_standard_hydr or loi_expert_hydr	old format
ChannelPerio2D VEF_fNy	Pb_hydraulique_Turbulent	VEF	3	$4 \Rightarrow 80 \rightarrow 640$ tri	8	Longueur_Melange + loi_standard_hydr	old format

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Turbulent Flow							
Turbulent_perio _2D_channel	Pb_hydraulique_Turbulent	VEF	2	6 ⇒ 6 → 6144 tri	24	Comparison of convection schemes - Longueur_Melange+loi_standard_hydr	old format
ChannelML3DVDF _fNydxdz	Pb_hydraulique_Turbulent	VDF	3	3 ⇒ 684 to 10516 hexa	19	Longueur_Melange + loi_standard_hydr	old format
ChannelML3DVEF _fNydxdz	Pb_hydraulique_Turbulent	VEF	3	960 & 3840 tetra 2348 → 47405 tetra	24	Longueur_Melange + loi_expert_hydr	old format
ChannelMLPerio3D VEF_fRe	Pb_hydraulique_Turbulent	VEF	3	480 tetra	12	Turbulent helium flow through a periodic plane channel	old format
ChannelMLPerio3D VEF_fRe_tetrafin	Pb_hydraulique_Turbulent	VEF	3	3840 tetra	12	Same than previous with mesh refinement - better results for high Re	old format
KEps_Meshing _VEF	Pb_hydraulique_Turbulent	VEF	3	960 & 3840 tetra 11735 → 16551 tetra	23	Meshing tests for 3D VEF-plane channel with $\kappa - \epsilon$ model	old format
ChannelkepsPerio 3DVEF_fRe	Pb_hydraulique_Turbulent	VEF	3	480 tetra	12	Pressure drop in a 3D periodic turbulent flow in a plane channel	old format
ChannelkepsPerio 3DVEF_fRe_tetrafin	Pb_hydraulique_Turbulent	VEF	3	3840 tetra	12	Same than previous with mesh refinement - $\kappa - \epsilon$ + loi_expert_hydr	old format
Channelkeps 3DVDF_fNydxdz	Pb_hydraulique_Turbulent	VDF	3	3 ⇒ 684, 2332 & 10516 hexa	18	Meshing tests for 3D VDF plane channel with $\kappa - \epsilon$ model	old format
Channelkeps 3DVEF_fNydxdz	Pb_hydraulique_Turbulent	VEF	3	960 & 3840 tetra 5 ⇒ 2348 → 47405	24	Meshing tests for 3D VEF plane channel with $\kappa - \epsilon$ model	old format
ChannelKEps_CLboite Perio_entree	Pb_hydraulique_Turbulent	VEF	3	13552 tetra	1	Periodic box on a turbulent flow in a plane channel with $\kappa - \epsilon$ model	old format
k_eps_vef _perio	Pb_hydraulique_Turbulent	VEF	3	1152 tetra	1	Verification of friction velocity in a periodic plane channel with $\kappa - \epsilon$ model	old format
Canal_plan_VDF_VEF _k_eps_standard _bicephale	Pb_hydraulique_Turbulent	VDF VEF VDF VEF	2 2 3 3	276 rect 172 tri 828 hexa 1982 tetra	2 2 2 2	Comparaison of the coupled and decoupled methods for solving the $\kappa - \epsilon$ transport equations k_epsilon_bicephale	new format

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Turbulent Flow							
expansion_2D_axi_3D	Pb_hydraulique_Turbulent	VDF	Axi	5577 rect	5	Expanding turbulent flow with	old format
_VEF_circular		VEF	3	65923 tetra	5	various inlet velocities	
expansion_3D	Pb_hydraulique_Turbulent	VDF	3	48400 hexa	5	Same than previous in 3D	old format
_VDF_VEF		VEF		51840 tetra	5	with VDF and VEF mesh	
Mixing_length	Pb_hydraulique_Turbulent	VEF	2	7 ⇒ 80 to	14	Mixing length in 2D and 3D	new format
_VEF_WF		VEF	3	7680 tetra		VEF-plane channel	report
OBI_diffuser_VEF	Pb_hydraulique_Turbulent	VEF	2	36644 tetra	2	Turbulent flow in a 2D diffuser	new format
_k_eps						with the $\kappa - \epsilon$ model	report
Tube_turb_perio	Pb_hydraulique_Turbulent	VEF	3	78576 tetra	1	Fully developed turbulent flow	old format
_EF_stab						in circular tube	
Tube_turb_perio	Pb_hydraulique_Turbulent	VEF	3	78576 tetra	1	Same than previous with muscl scheme	old format
_muscl						better prediction of turbulent viscosity	
EsthairNoWire	Pb_hydraulique_Turbulent	VEF	3	3 ⇒ 3114 to	5	Esthair calculations of a 19 rods	old format
				11829 tetra		sub-assembly without space wire	
ContractionTurbFlow	Pb_hydraulique_Turbulent	VEF	3	684 & 1260	6	Pressure loss through a	old format
_3D_VEF				29011 & 107842		sudden contraction	
Cube_Atmo	Pb_hydraulique_Turbulent	VEF	3	2 ⇒ 42964 and	4	Atmospheric flow around	old format
				55183 hexa		a cube	
Couche_Limite	Pb_hydraulique_Turbulent	VEF	3	27727 tetra	3	Simulation of the atmospheric boundary	old format
_Atmospherique						layer - Source_Transport_K_Eps	
Loi_paroi_3D_VEF	Pb_hydraulique_Turbulent	VEF	3	9 ⇒ 288 to	24	Validate behaviour of VEF/Nicholson/	old format
				9216 tetra		λu' approach - Source_Qdm_lambdaup	
Watlon_k_eps	Pb_hydraulique_Turbulent	VEF	3	661632 tetra	6	Watlon experiment: fluid mixing in	old format
						T-pipe with long cycle fluctuations	skip
Flow_in_curved_pipe	skip Pb_Hydraulique_Turbulent	VEF	3	463259 tetra	2	Swirling turbulent flow through	old format
						a curved pipe	skip

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Turbulent Flow							
Fiche_validation_Re590	Pb_hydraulique_Turbulent	VDF VEF	3	62370 hexa 61440 tetra	4	New wall law treatment for the LES of turbulent heat transfer in a periodic channel	old format
CHANNEL_LES_VEF _RE_TAU_1110	Pb_hydraulique_Turbulent	VEF	3	65856 tetra	4	Channel LES VEF $Re_\tau = 1110$ with EF_STAB scheme	old format
les_THI_qdm_ReInf_VEF	Pb_hydraulique_Turbulent	VDF VEF	3	195112 hexa 196608 tetra	12	LES: Isotropic homogeneous turbulence in a periodic cube	old format exclu_nr
Channel_VEF_LES_Hyd _WF_Pressure_drop	Pb_hydraulique_Turbulent	VEF	3	4800 tetra	12	Pressure drop in a 3D periodic turbulent flow in a plane channel	old format
Loi_paroi2D_VEF	Pb_hydraulique_Turbulent	VEF	2	$5 \Rightarrow 80$ to 1280 tetra	24	Validation of a Cranck-Nicholson time scheme - stabilization with a source term λu'	old format
Baglietto	Pb_hydraulique_Turbulent	VEF	2	162 tri	6	Study of non-linear Baglietto $\kappa - \epsilon$ model for low Reynolds number	old format
Low_Reynolds	Pb_hydraulique_Turbulent	VDF VEF	3	1192 hexa mesh	7	Validation of Launder-Sharma, Jones-Launder and Lam-Bremhorst for low Reynolds	old format
Verification_k_epsilon _transport_equation	Pb_hydraulique_Turbulent	VDF VEF	3	10^6 hexa $7.5 \cdot 10^5$ tetra	4	Check the post-processing of the convective, diffusive and source terms of the $k - \varepsilon$ model	new format
decroissance_keps	Pb_hydraulique_Turbulent	VDF	2	1 rect	2	Decreasing turbulence in a plane channel - Coding verification	old format
Marche_incline	Pb_hydraulique_Turbulent	VEF	2	200 tria	3	Turbulent channel flow with backward step - Coding verification	old format
Test_ghost_visit	Pb_hydraulique_Turbulent	VDF	3	300 rect	1	Test of visualisation mors specially with ghost - Coding verification	old format
2D_Cyl_Re20000	Pb_hydraulique_Turbulent	VEF	2	$3 \Rightarrow 9034$ to 32032 tetra	18	2D cylinder in turbulent oscillating cross water flow	old format skip
Drag	Pb_hydraulique_Turbulent	VEF	2	$6 \Rightarrow 920$ to 1123 tri	24	Obstacles of different shapes in turbulent air flow	old format
3D_Cyl_Re20000	Pb_hydraulique_Turbulent	VEF	3	458802 tetra	6	3D cylinder in turbulent oscillating cross water flow	old format skip

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Turbulent Flow							
Turbulent_Simple _water_jet	**Pb_hydraulique_ Concentration_Turbulent**	VEF	3	72692 tetra	4	Turbulent water jet with concentration in a box	old format
Turbulent_Simple _water_jet_refined	**Pb_hydraulique_ Concentration_Turbulent**	VEF	3	283772 tetra	8	Turbulent simple water jet with refined mesh	old format skip
Marche_SKE_steady	Pb_hydraulique_Turbulent	VEF	2	45489 tri	1	Steady 2D Turbulent $k-\epsilon$: Marche_SKE **Implicit_Euler_steady_scheme**	old format
Diffuseur_SKE_steady	Pb_hydraulique_Turbulent	VEF	2	47940 tri	1	Steady 2D Turbulent $k-\epsilon$: Diffuseur_SKE **Implicit_Euler_steady_scheme**	old format
Verification_CEG	Pb_hydraulique_Turbulent	VEF	3	3 $\Rightarrow$ 3465 to 15628 tetra	3	Vortices detection and calculation of gas entrainment criterias - **CEG**	old format
Thermal Turbulent Flow							
Channel_T1_T2 _incompressible	Pb_thermohydraulique _turbulent	VEF	3	5 $\Rightarrow$ 1536 to 5184 tetra	5	$\kappa-\epsilon$ + loi_standard_hydr Prandtl + loi_standard_hydr_scalaire	new format report
Channel_ML_Thydr _TBLE_VEF_ReT7200	Pb_thermohydraulique _turbulent	VEF	3	2880 tetra + 4 TBLE 1D mesh	7	Turbulent heat exchange through a periodic plane channel	old format
Conv_Heated_pipe _wall_temp	Pb_thermohydraulique _turbulent	VEF	3	5 $\Rightarrow$ 576 to 3308 tetra	14	Forced convection with imposed wall heat flux	old format
Conv_Pipe_Perio _Expl	Pb_thermohydraulique _turbulent	VEF	3	2160 tetra	3	Forced convection with EF_stab scheme in explicit time scheme	old format
Conv_Pipe_Perio _Impl	Pb_thermohydraulique _turbulent	VEF	3	2160 tetra	3	Forced convection with EF_stab scheme in implicit time scheme	old format
Conv_Pipe_InOut	Pb_thermohydraulique _turbulent	VEF	3	97200 tetra	3	Forced convection with EF_stab scheme Inlet/Outlet BC	old format
Heated_floor _k_eps	Pb_thermohydraulique _turbulent	VDF VEF	2	7784 rect 11385 tri	3	Turbulent flow above a heated floor: $k-\epsilon$ modeling	old format
Heated_Backward _Facing_Step_2D	Pb_thermohydraulique _turbulent	VDF VEF	2	4134 rect 10855 tri	3	Turbulent flow above a heated backward facing step: $k-\epsilon$ modeling	old format

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Thermal Turbulent Flow							
Jet_impingement_on _a_hot_flat_plate	Pb_thermohydraulique _turbulent	VEF	3	116356 tetra	3	Turbulent heated air jet impacting an isothermal plane wall	old format
Thermal_stratification _flow	Pb_thermohydraulique _turbulent	VEF	2 3	2968 tri 27252 tetra	4	Thermal stratification in a cooled plenum	new format report
Two_Layers_ Stratif	Pb_thermohydraulique _turbulent	VDF VEF	2 2	7000 rect 7200 tetra	6	Turbulent mixing layers at different velocities and temperatures	old format
Two_Layers_ Stratif_impl	Pb_thermohydraulique _turbulent	VEF	2	7200 tetra	20	Same as previous with implicite time scheme - with different algorithms	old format
Turb_coupled _pipeFlow	Pb_thermohydraulique _turbulent **Pb_conduction**	VEF	3	Fluid: 3304 tetra Solid: 2543 tetra	15	Turbulent heat exchange through a periodic circular pipe coupled with wall conduction	old format
PeriodicBox	Pb_thermohydraulique _turbulent	VEF	3	463259 tetra	4	Flow in a curved pipe with RANS and LES model Re=50000	old format
wl_vef_laminar	Pb_thermohydraulique _turbulent	VEF	3	2400 tetra	4	Wall law validation for VEF discretization	old format
wl_vef_analytic	Pb_thermohydraulique _turbulent	VEF	3	3 $\Rightarrow$ 1200 to 28800 tetra	6	Same than previous with comparison between with and whitout wall laws	old format
wl_vef_correlation	Pb_thermohydraulique _turbulent	VEF	3	2400 tetra	5	Same than previous with $k-\epsilon$ + loi_standard_hydr	old format
wl_vef_coupling	Pb_thermohydraulique _turbulent **Pb_conduction**	VEF	3	2400 hexa + 2400 in wall	4	Turbulent heat exchange through a periodic plane channel coupled with wall conduction	old format
Uniform_keps_front _field_from_ud	Pb_thermohydraulique _turbulent	VDF VEF VDF VEF	2 2 3 3	781 rect 3124 tri 700 hexa 16800 tetra	8	Check Champ_front_normal fields Coding verification	old format exclu_nr
Boussinesq_VEF	Pb_thermohydraulique _turbulent	VEF	3	34992 tetra	8	Check Boussinesq source term in VEF for LES - Schema_Predictor_Corrector	old format

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Thermal Turbulent Flow							
Channel_LES_Re_ tau405_Pr071_T0Q	Pb_thermohydraulique _turbulent	VDF VEF	3	8192 hexa 24192 & 65856	3	Channel LES T0-Q $Re_\tau = 405$ with VEF – EF_STAB Scheme - logarithmic standard wall law	old format
les_Re395Pr0025 _T0Q	Pb_thermohydraulique _turbulent	VDF VEF	3	8192 hexa 32928 & 67362	6	Turbulence (LES) and Heat transport (Heat Flux) in a channel flow $Re_\tau = 395$ - $Pr = 0.025$	old format
les_Re395Pr0025 _ToQ_couple	Pb_thermohydraulique _turbulent **Pb_conduction**	VDF VEF wall	3	8192 hexa 12960 tetra 2048/4320	4	Turbulence (LES) and Heat transport (coupling with solid walls - thermal activity ratio K=0.28) in a channel flow $Re_\tau = 395$ - $Pr = 0.025$	old format
les_Re395Pr071 _T0Q	Pb_thermohydraulique _turbulent	VDF VEF	3	8192 hexa 22176 & 67362	5	Turbulence (LES) and Heat transport (Heat Flux) in a channel flow $Re_\tau = 395$ - $Pr = 0.71$	old format
les_Re180Pr071 _T0Q	Pb_thermohydraulique _turbulent	VDF VEF	3	67392 hexa 134640 tetra	3	Turbulence (LES) and Heat transport (Heat Flux) in a channel flow $Re_\tau = 180$ - $Pr = 0.71$	old format
Fiche_validation _Re395_Pr0.71	Pb_thermohydraulique _turbulent	VDF VEF	3	18216 hexa 22176 tetra	4	New wall law treatment for the LES of turbulent heat transfer in a periodic channel $Re_\tau = 395$ and $Pr = 0.71$	old format
Fiche_validation _Re180_Pr0.025	Pb_thermohydraulique _turbulent	VDF VEF	3	1920 hexa 2880 tetra	4	New wall law treatment for the LES of turbulent heat transfer in a periodic channel $Re_\tau = 180$ and $Pr = 0.025$	old format
Fiche_validation _Re180_Pr0.71	Pb_thermohydraulique _turbulent	VDF VEF	3	1920 hexa 2880 tetra	4	New wall law treatment for the LES of turbulent heat transfer in a periodic channel $Re_\tau = 180$ and $Pr = 0.71$	old format
Comp_conv	Pb_thermohydraulique _turbulent	VEF VEF	2 3	628 tri 40320 tetra	26 24	Temperature convection as a passive scalar	old format
Test_tparoi	Pb_thermohydraulique _turbulent	VEF	2	4 tri	3	Coding verification of the Tparoi post treatment	old format
Verification_ flux_implicite	Pb_thermohydraulique _turbulent **Pb_conduction**	VEF	2	fluid : 16 solid : 16	28	Coding verification of the heat balance: compensation between the flow from solid to liquid and the flow from liquid to solid	old format
Poreux_VEF	Pb_thermohydraulique _turbulent	VEF VEF	2 3	2968 tri 486 & 560 tetra	6	Verification case of the flow in a porous channel	old format
Nusselt_Correlation _2D	Pb_thermohydraulique _turbulent	VDF VEF	2	10 rect 24 tri	2	1D flow using a Nusselt number correlation in a Forced convection regime	old format

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Thermal Turbulent Flow							
Nusselt_Correlation _Coupling_Pb	Pb_thermohydraulique _turbulent **Pb_conduction**	VDF VEF	3	100 hexa 222 tetra	2 2	1D flow using a Nusselt number correlation, coupled to a conduction problem ; forced convection	old format
EFstab_Muscl_and _Limiters_VEF	Pb_thermohydraulique _turbulent	VEF VEF	2 3	900 & 6130 tri 6000 tetra	20	Evaluation of EF_stab an Muscl convective schemes in simple VEF-configurations	old format
T_paroi	Pb_thermohydraulique _turbulent	VEF	2	144 tri	3	Wall temperature verification in VEF discretisation with Neumann conditions	old format
GR16_k_eps	Pb_thermohydraulique _turbulent	VEF	3	2851995 tetra	4	Validation of heat exchange in tube bundles without spacer wire on sodium heat exchangers	old format skip
ThermalCoupling_ TurbulentFlow_VEF	Pb_thermohydraulique _turbulent **Pb_conduction**	VEF VEF	3	864 + 432 (Trio) 1578 (ICEM)	2	Thermal coupling between a fluid and a solid domains for a turbulent flow	old format
Couplage_Implicite _Instationnaire	Pb_thermohydraulique _turbulent **Pb_conduction**	VEF	3	160 tetra	1	Coupled pipe flow with non stationnary conduction solved by an implicit scheme Check of the heat balances	old format
Marche_k_eps_T _steady	Pb_thermohydraulique _turbulent	VEF	2	365 tri	1	Steady Themohydraulique 2D Turbulent K-Eps VEF Numerical test	old format
les_THI_T _scalaire_VEF	Pb_thermohydraulique _turbulent	VEF	3	196608 tetra	2	Isotropic homogeneous turbulence in a periodic cube	old format exclu_nr
Two-phase Flows with Front-Tracking							
FTD_particles_ coupling	Probleme_FT_Disc _gen	VDF VEF	3	20000 hexa 1600 or 20000 tet	7	Account for fluid effetcs on a particle in a column and for reaction effect and two way coupling	old format
FTD_particles _transfo	Probleme_FT_Disc _gen	VDF VEF	3	200096 hexa 72000 tetra	2	Transformation of gas bubbles into particles and vanishing of particles entering into the gas	old format
FTD_hanging _drop	Probleme_FT_Disc _gen	VDF	3	67240 hexa	2	Drop hanging to a solid wall	new format report
FTD_oscillating _bubble	Probleme_FT_Disc _gen	VDF	3	216000 hexa	2	Bubble in surrounding fluid with a free surface subject to oscillations	new format report

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Two-phase Flows with Front-Tracking							
FTD_solid_particle _fall_viscosity	Probleme_FT_Disc_gen	VDF	3	20000 hexa	3	Fall of a solid particle in viscous fluid followed by FTD	old format
FTD_sloshing	Probleme_FT_Disc_gen	VDF	3	365520 hexa	1	Free surface oscillations due to the sloshing of a liquid in a cylindrical pool	old format
FTD_hysteresis	Probleme_FT_Disc_gen	VDF	3	72000 hexa	38	Contact line treatment with contact angle hysteresis	old format
FTD_PhaseChange _1D	Probleme_FT_Disc_gen	VDF	3	720 hexa	4	Validation Test for the Interface Movement and the Diphasic Heating	old format
FTD_rising_drop	Probleme_FT_Disc_gen	VDF	3	11664000 hexa	1	Rising of an inclusion of light fluid in a heavy fluid	old format exclu_nr
ftd_gravite	Probleme_FT_Disc_gen	VEF	3	5239 tetra	1	Free fall of a drop	old format
ftd_remaillage	Probleme_FT_Disc_gen	VDF VEF	3	1500 hexa 5239 tetra	4	Test of the volume and surface conservation during the remeshing	old format
PB_FT	Probleme_FT_Disc_gen	VDF	2	7200, 8800 and 21600 rect	3	Influence of the mesh and its discontinuity on the behavior of a bubble - verification test	old format
IBC_penalisation _poiseuille	Probleme_FT_Disc_gen	VDF	2	902 rect	2	Influence of penalization in Front-Tracking in 2D verification test	old format
ibc_refroidi	Probleme_FT_Disc_gen	VDF	2	2400 rect	2	Influence of thermal penalization in Front-Tracking	old format
Chimie_FT	Probleme_FT_Disc_gen	VDF VEF	2	1 rect 4 tri	5	Test of chemical reactions in Front-Tracking **Chimie, reactions**	old format
pena_couette	Probleme_FT_Disc_gen	VDF	2	961 rect	2	Interpolation method test on a Taylor-Couette flow Fluid flow between two counter-rotating cylinders	old format
pena_ellipsoide	Probleme_FT_Disc_gen	VDF	3	2250 hexa	2	Influence of penalization in Front-Tracking in 3D Molten glass bath reactor with stirrer	old format

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Two-phase Flows with Front-Tracking							
tubeY	Probleme_FT_Disc_gen	VDF VEF	2	1088 rect 1088 tri	2	Checking for competing reactions	old format
ellipsoid_vdf _therm	Probleme_FT_Disc_gen	VDF	3	18000 hexa	2	Influence of thermal penalization in Front-Tracking in 3D molten glass bath reactor with stirrer + thermal	old format
Bullage_Huile_ Creuset_Froid	Probleme_FT_Disc_gen	VEF	3	52920 hexa	2	Rapport on IBC with interfaces	old format
iodure-iodate	Probleme_FT_Disc_gen	VEF	2	4 tri	7	Verification of competing reactions	old format
iodure-iodate-melange	Probleme_FT_Disc_gen	VEF	2	4 tri	17	Checking for competing reactions	old format
Two-phase Flows with CMFD							
Verification_k_tau_ transport	Pb_Multiphase	PolyMAC	3	8000	2	verification of velocity gradient and vorticity	Jupyter
Verification_wall_law	Pb_Multiphase	PolyMAC	3	18000	2	Coding verification of CMFD turbulent wall laws	Jupyter
canal_plan	Pb_Multiphase	PolyMAC	2	81 $\Rightarrow$ 5 to 7500	1	Verification of adaptive wall laws in a 2D plane channel	Jupyter
decroissance_ktau	Pb_Multiphase	PolyMAC	2	4 tetra	2	Verification of velocity gradient and vorticity coding	Jupyter
expansion_NO_MASS	Pb_HEM	PolyMAC	2	4999	1	Validation of the Homogeneous Equilibrium Model coupled with Stiffened Gaz on an expansion tube	new format
expansion_WITH_ MASS	Pb_HEM	PolyMAC	2	4999	1	Validation of the Homogeneous Equilibrium Model with mass transfert on an expansion tube	new format skip_prm
shock_dodecane	Pb_HEM	PolyMAC	2	10000	1	Validation of the Homogeneous Equilibrium Model on a two-phase shock tube	new format

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Fluid-structure interactions with ALE							
TwoCylindersALE	Pb_hydraulique_ALE	VEF	2	110466 tri	1	2D fluid annulus region confined between an inner wall moving with an harmonic motion and an outer wall fixed	new format report
RotationALE	Pb_hydraulique_ALE	VEF	2	30000 tri	1	2D annulus with the inner wall turning with a constant angular velocity and outer wall fixed was chosen	new format
TwoOscillating CylindersALE	Pb_hydraulique_ALE	VEF	2	241618 tri	1	Hydrodynamic interaction of two cylinders subjected to small oscillations	new format report
3dOscillatingBeam	Pb_hydraulique_ALE	VEF	3	1454267 tetra	1	3D oscillating cylindrical beam into a confined space	new format
SquareObstacleALE	Pb_hydraulique_ALE	VEF	2	51700 tri	3	Flow across a horizontally moving square in a tank	new format
DivaALE	Pb_hydraulique_ALE	VEF	2	25806, 51146 & 102080 tri	3	Vibrations of a cylinder in a square tube bundle immersed in a viscous fluid	new format report
Dilatable Fluids							
ConvectionJuarez	Pb_Thermohydraulique _QC	VDF 2 VEF 2	2	3 ⇒ 2974, 12344 & 50284 rect 49376 tri	5	Heat transfer calculations in an open cavity considering natural convection and temperature-dependent fluid properties	old format
INEEL_VEF_QC	Pb_Thermohydraulique _QC	VDF VEF	3	6400 hexa 19200 tetra	8	Laminar flow heated either with a volumetric power or a wall heat flux - Analytical valid. with INEEL exp	old format
INEEL_VDF_QC _1D_2D	Pb_Thermohydraulique _QC	VDF	3	400 & 6400 hexa	3	Laminar flow in a heated pipe with a volumetric power in a rectangular cavity	old format
laminar_flow_ vertical_plate	Pb_Thermohydraulique _QC	VDF VEF	3	4800 hexa 3 ⇒ 9600 to 19200	27	Free and mixed convection along a vertical hot plate	old format
Convection_kEps _QC	Pb_Thermohydraulique _Turbulent_QC	VDF VEF	2	4752 rect 4752 tri	5	Thermohydraulic and turbulent flow in a heated square cavity - Quasi Compressible fluid at low Mach	old format

PDF File name	Problem	Dis.	Dim.	Mesh	Nb jdds	Goal of the sheet	State
Dilatable Fluids							
Channel_T1_T2 _QC	Pb_Thermohydraulique _Turbulent_QC	VEF	3	2214 tetra with 3 stretching	3	Quasi-compressible turbulent heat exchange through a plane channel	old format
Coupled_plane_ channel_VEF channel_VEF	Pb_Thermohydraulique _Turbulent_QC **Pb_Conduction**	VEF	3	Fluid: 2598 tetra Solid: 5355 tetra	1	Simulation of a 3D VEF plane chanel in quasi-compressible thermohydraulics coupled to a solid with power output	old format exclu_nr
NoFlow-lami -espece	Pb_Thermohydraulique _Especes_QC	VDF VEF	3	4000 hexa 24000 tetra	2	Mixing of species without chemical reactions	new format
Sensitivity Analysis							
Sensitivity_analysis_for _Steady_Obstacle	Pb_Thermohydraulique **Pb_Hydraulique_ sensibility**	VEF	2	91829 triang.	1	**Sensitivity equation method** for the Navier-Stokes : Estimation of the variance	new format
Sensitivity_analysis_for _Vahl_Davis	Pb_Thermohydraulique **Pb_Hydraulique_ sensibility**	VEF	2	98635 triang.	5	**Sensitivity equation method** for the Navier-Stokes : applied on the benchmark problem of natural convection	new format
Other applications							
conduction_T_ oscillant	Pb_conduction	VEF	3	$4 \Rightarrow 576$ to 129600 tetra	7	VEF calculation of Conduction in a wall through a rectangular box	old format