

Kelvin-Helmholtz instability

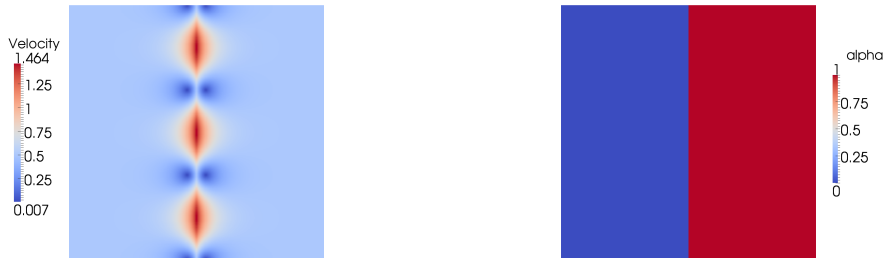


FIGURE: Velocity and volume fraction at initial time, Kelvin-Helmholtz instability.

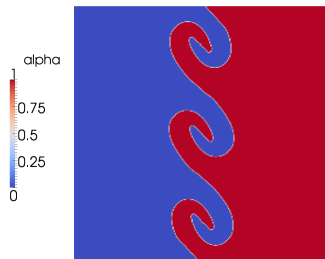


FIGURE: Volume fraction at final time, Kelvin-Helmholtz instability.

- Tests no Titane (CCRT) : processor Intel Xeon 5570 quadri-coeurs

Nb cores	1	2	4	8	16	32	32	64	64
	1MPI	2MPI	4MPI	8MPI	16MPI	32MPI	8MPI +4Th.	64MPI	16MPI +4Th.
CPU time	400	228	134	67	40	31	22	38	15.5
Speed up		1.75	2.98	5.97	10	12.9	18.1	10.52	26
Efficiency		0.87	0.74	0.74	0.62	0.40	0.56	0.16	0.41
Cells/core	65K	32K	16K	8K	4K	2K	2K	1K	1K

TABLE: Mesh 256×256

- Tests on Titane (CCRT) : processor Intel Xeon 5570 quadri-coeurs

Nb cores	1	2	16	32	256	256
	1MPI	2MPI	16MPI	32MPI	256MPI	64MPI +4Th.
CPU time	1800	910	150	80	54	17
Efficiency		0.98	0.75	0.70	0.13	0.41
Cells/core	1048K	524K	65K	32K	4K	4K

TABLE: Mesh 1024×1024

- Tests on Titane (CCRT) : processor Intel Xeon 5570 quadri-coeurs

Nb Cores	512	512	512
	512MPI	256MPI +2Th.	128MPI +4Th.
CPU time	650	440	320
Cells/core	8K	8K	8K

TABLE: Mesh 2048×2048

FIGURE: Density. Free fall of a liquid block in a gas with 4M cells, HP cluster (Full MPI with 200 cores).

FIGURE: Velocity. Free fall of a liquid block in a gas with 4M cells, HP cluster (Full MPI with 200 cores).