K	CPU explicit (s/Δt/node)	$\frac{N^{small}(K)}{N}$ (%)	Expected gain (scalar)	CPU pred. phase (s/KΔt)	CPU cor. phase (s/KΔt)	Measured gain (parallel)	Error (%)
10	$4.13.10^{-7}$	0.015	8.69	1.81	4.36	2.93	1 10−5
40	$4.13.10^{-7}$	0.040	15.38	1.83	17.35	3.82	1.6 10−4
Implicit						36.88	2 .10^{-2}

Table 1: **Spatial probe**: Time step factor K, CPU of the explicit scheme per explicit time-step Δt and per node, percentage of nodes in the inner region, theoretical gain in scalar mode, CPU of the prediction phase per time-step $K\Delta t$, CPU of the correction phase per time-step $K\Delta t$, measured parallel gain, and relative error.

Test case	Mesh size (vertices)	nproc	K	Measured gain (usual partition)	Measured gain (MCP)
Single cylinder Re=8.4M	4.3M	384	20	1.18	1.51
Tandem cylinder Re=166K	2.59M	192	20	1.2	1.29
Tandem cylinder Re=166K	16M	192	20	not computed	1.77
Tandem cylinder Re=166K	16M	768	20	1.02	2.0

Table 2: Gains obtained by parallel multirate simulations using usual partitions and parallel multirate simulations using multi-constrained partitions (noted MCP), when compared to the parallel explicit simulations using the same partitions.