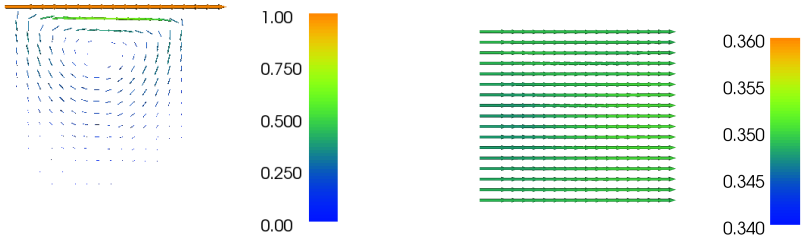
ℓ	DoF	time_{AV}	time_{P}	it_{P}	it_{AV}
4	3,556	0.133	0.738	3	12.3
5	13,764	0.732	3.189	3	12.0
6	54,148	5.451	20.576	3	12.0
7	214,788	23.184	85.028	3	12.3
8	855,556	128.636	452.934	3	12.3

Table 1: Cavity Driven - Direct application of the preconditioner

ℓ	DoF	time_{AV}	time_{P}	it_{P}	it_{AV}
4	3,556	0.30	1.240	3	13.7
5	13,764	1.77	6.327	3	13.3
6	54,148	8.84	30.419	3	13.7
7	214,788	46.11	154.014	3	13.7
8	855,556	178.131	594.776	3	13.3

Table 2: Cavity Driven - Iterative application of the preconditioner

- ℓ: mesh level
- DoF: total degrees of freedom for the 4 by 4 system
- time_{AV}: average FGMRES solve time
- time_{P}: total non-linear time (includes all matrix assembles and all matrix solves)
- it_{P}: number of Picard iterations
- it_{AVb}: average number of FGMRES iterations



(a) Velocity Solution (b) Magnetic Solution (normalised)

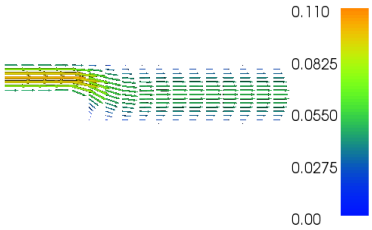
Figure 1: Cavity Driven flow

ℓ	DoF	time_{AV}	time_{P}	it_{P}	it_{AV}
4	3,140	0.091	0.579	3	13.3
5	12,100	0.436	2.229	3	14.0
6	47,492	2.246	10.196	3	14.0
7	188,164	11.906	49.144	3	13.0
8	749,060	49.345	201.360	3	11.3

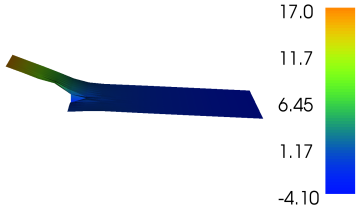
Table 3: Flow over step - Direct application of the preconditioner

ℓ	DoF	time_{AV}	time_{P}	it_{P}	it_{AV}
4	3,140	0.308	1.640	4	19.2
5	12,100	1.484	7.345	4	19.0
6	47,492	7.269	25.259	3	17.0
7	188,164	30.333	103.745	3	16.7
8	749,060	187.996	652.892	3	15.0

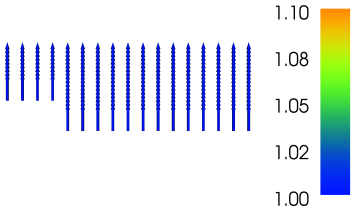
Table 4: Flow over step - Iterative application of the preconditioner



(a) Velocity Solution



(b) Pressure Solution



(c) Magnetic Solution

Figure 2: Flow over step