

Table 1: Effect of different information exchange modes and no explicit exchange mode on the RelMSE. Reported errors are multiplied by 10^2 .

mode	CF (u)	CF (v)	CF (p)	MP (u)	MP (v)	MP (α)	Avg
No exchange	11.12	13.70	14.21	75.52	54.96	121.63	48.52
Mixture	7.33	7.54	5.91	20.88	25.12	71.3	23.01
Addition	6.11	6.28	4.87	16.89	22.93	22.79	13.31
SEA	1.64	1.49	1.14	17.18	23.45	22.45	11.22

Table 2: Effect of time invariant parameter injection to the SEA implemented temporal transformer.

mode	Cylinder flow	Multiphase flow
Without injection	0.015	0.4381
With injection	0.014	0.2157

Table 3: Effect of batch size on autoregressive generation RelMSE for a SEA implemented model.

batch size	Cylinder flow	Multiphase flow
1	0.107	0.4063
2	0.1076	0.5562
4	0.1101	1.1877

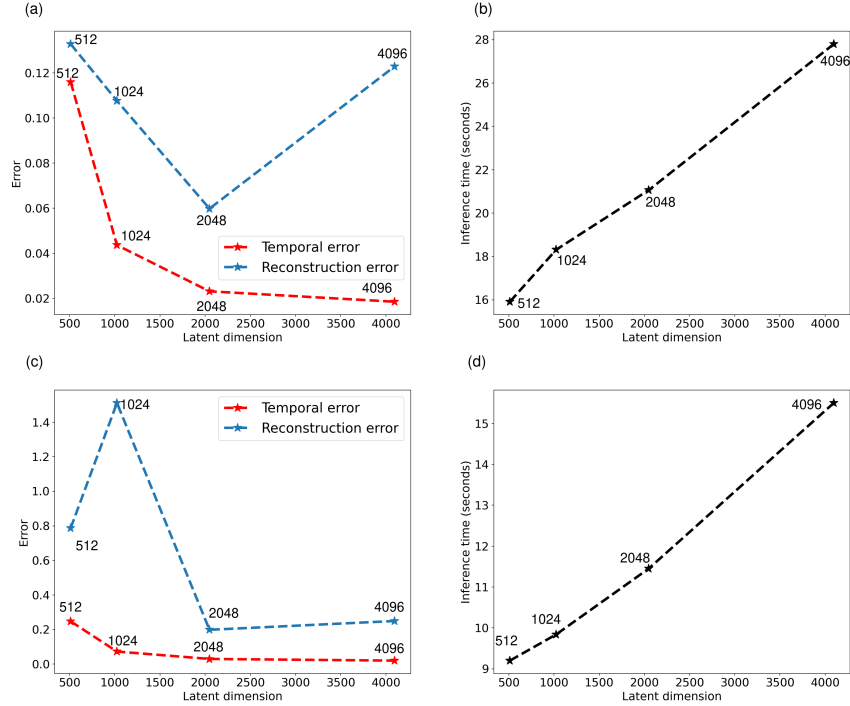


Figure 1: Detailed evaluation of error components and inference times (Reported in seconds) with respect to model dimensions for (a) error in cylinder flow, (b) inference time for cylinder flow, (c) error in multiphase flow, and (d) inference time for multiphase flow.