

Hyperparameter	$N = \{100, \dots, 3200\}$	$N = 6400$	Random Features	Re
J_D	0.5	0.5	/	0.5
η_J	0.005	0.01	0.0	0.0
$\eta_{W_{in}}$	0.03	0.01	0.0	0.0
$\eta_{W_{out}}$	0.03	0.01	0.03	0.0
κ_J	1.4	1.8	/	/
$\kappa_{W_{in}}$	3.0	3.0	3.0	3.0
$\kappa_{W_{out}}$	3.0	3.0	3.0	3.0
λ_x	5.0	5.0	5.0	5.0
λ_y	0.9	0.7	0	0
n_{epochs}	200	400	200	200
max_{iter}	5	5	1	5

Table 1: Optimal hyperparameters for models used in benchmarking. Both random features and reservoir models can be seen as a special case of the full model with some specific components removed.