

## C Hyperparameters used

Tables 7 and 8 summarize the hyperparameters used in the `test` partitions of the CA, MIS, and MVC benchmarks for each method.

**Table 7.** Hyperparameters  $(\theta, \alpha)$  used by BACKPAS and BACKPAS-PARAM on the `test` partitions of CA, MIS and MVC benchmarks.

Benchmark	BACKPAS	BACKPAS-PARAM
CA	$(0.8231211, -0.7828316)$	$(0.6294576, 0.8672775)$
MIS	$(0.6161128, -0.9946887)$	$(0.6071678, -0.7594742)$
MVC	$(0.9958419, -0.9282533)$	$(0.9470682, -0.0458712)$

**Table 8.** Hyperparameters  $(k_0, k_1, \Delta)$  used by BACKPAS-V0, BACKPAS-NET and CONPAS on the `test` partitions of CA, MIS and MVC benchmarks.

Benchmark	BACKPAS-V0	BACKPAS-NET	CONPAS
CA	$(826, 1824, 1378)$	$(1063, 839, 1449)$	$(1500, 0, 0)$
MIS	$(1091, 591, 53)$	$(2180, 935, 23)$	$(500, 500, 10)$
MVC	$(1087, 1414, 296)$	$(728, 2286, 2)$	$(500, 100, 15)$