

## GPTIPS pareto front report

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Config file: Y11\_config.m

Number of models on front: 9

Total models: 100

This report shows the expressional complexity/performance characteristics (on training data) of symbolic models on the pareto front.

Numerical precision is reduced for display purposes.

Click on column headers to sort models by expressional complexity and goodness of fit ( $R^2$ ).

Model ID	Goodness of fit (R <sup>2</sup> )	Model complexity	Model
13	0.958	222	$0.32 x_1 - 0.0336 x_2 - 0.865 x_3 - 0.412 x_4 + 0.0426 x_5 - 1.44e-5 x_1 (x_2 + x_3) + 0.0331 x_4 (x_2 + x_3) - 0.017 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0662 x_3 (x_1 - 1.0 x_5) - 0.0241 x_2 x_4 - 0.0451 x_3 x_5 - 2.99e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 1.44e-5 x_1 x_2 x_4^2 - 4.15e-5 x_2 x_4 (x_3 + x_5) + 2.42$
15	0.871	138	$0.00463 x_2 - 0.0012 x_1 + 0.0123 x_3 + 0.0629 x_4 + 0.0752 x_5 - 1.4e-5 x_1 (x_2 + x_3) + 0.00583 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 1.4e-5 x_1 x_2 x_4^2 - 2.49$
24	0.954	208	$0.152 x_1 - 0.0258 x_2 - 0.691 x_3 - 0.364 x_4 + 0.024 x_5 - 9.13e-6 x_1 (x_2 + x_3) + 0.0106 x_4 (x_2 + x_3) + 0.00386 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0212 x_3 (x_1 - 1.0 x_5) - 0.00209 x_2 x_4 - 3.32e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 9.13e-6 x_1 x_2 x_4^2 - 2.87e-5 x_4 (x_2 + x_3) (x_3 + x_5) + 1.89$
48	0.958	228	$0.32 x_1 - 0.0336 x_2 - 0.865 x_3 - 0.412 x_4 + 0.0426 x_5 - 1.44e-5 x_1 (x_2 + x_3) + 0.0331 x_4 (x_2 + x_3) - 0.017 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0662 x_3 (x_1 - 1.0 x_5) - 0.0241 x_2 x_4 - 0.0451 x_3 x_5 - 2.99e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 1.44e-5 x_1 x_2 x_4^2 - 4.15e-5 x_2 x_4 (x_3 + x_5) + 2.42$
49	0.958	218	$0.32 x_1 - 0.0336 x_2 - 0.865 x_3 - 0.412 x_4 + 0.0426 x_5 - 1.44e-5 x_1 (x_2 + x_3) + 0.0331 x_4 (x_2 + x_3) - 0.017 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0662 x_3 (x_1 - 1.0 x_5) - 0.0241 x_2 x_4 - 0.0451 x_3 x_5 - 2.99e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 1.44e-5 x_1 x_2 x_4^2 - 4.15e-5 x_2 x_4 (x_3 + x_5) + 2.42$
53	0.958	214	$0.32 x_1 - 0.0336 x_2 - 0.865 x_3 - 0.412 x_4 + 0.0426 x_5 - 1.44e-5 x_1 (x_2 + x_3) - 0.017 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0662 x_3 (x_1 - 1.0 x_5) + 0.00897 x_2 x_4 + 0.0331 x_3 x_4 - 0.0451 x_3 x_5 - 2.99e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 1.44e-5 x_1 x_2 x_4^2 - 4.15e-5 x_2 x_4 (x_3 + x_5) + 2.42$
66	0.925	154	$0.0195 x_5 - 0.0164 x_2 - 0.553 x_3 - 0.108 x_4 - 0.00895 x_1 - 7.53e-6 x_1 x_2 - 0.0268 x_1 x_3 + 0.00117 x_2 x_4 + 0.0134 x_3 x_4 + 0.0137 x_3 x_5 - 7.53e-6 x_1 x_2 x_4^2 + 1.98$
69	0.958	252	$0.352 x_1 - 0.0333 x_2 - 0.899 x_3 - 0.41 x_4 + 0.036 x_5 - 1.48e-5 x_1 (x_2 + x_3) + 0.0352 x_4 (x_2 + x_3) - 0.0176 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0703 x_3 (x_1 - 1.0 x_5) - 0.0263 x_2 x_4 - 0.0482 x_3 x_5 - 2.98e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 1.48e-5 x_1 x_2 x_4^2 - 3.86e-5 x_4 (x_2 + x_3) (x_3 + x_5) + 2.58$
72	0.958	230	$0.352 x_1 - 0.0333 x_2 - 0.899 x_3 - 0.41 x_4 + 0.036 x_5 - 1.48e-5 x_1 (x_2 + x_3) + 0.0352 x_4 (x_2 + x_3) - 0.0176 (x_1 - 1.0 x_3) (x_3 - 1.0 x_4) - 0.0703 x_3 (x_1 - 1.0 x_5) - 0.0263 x_2 x_4 - 0.0482 x_3 x_5 - 2.98e-5 x_4 (x_2 + x_3) (2.0 x_1 + x_2) - 1.48e-5 x_1 x_2 x_4^2 - 3.86e-5 x_4 (x_2 + x_3) (x_3 + x_5) + 2.58$

GPTIPS - the symbolic data mining platform for MATLAB

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