

Updated surrogate model

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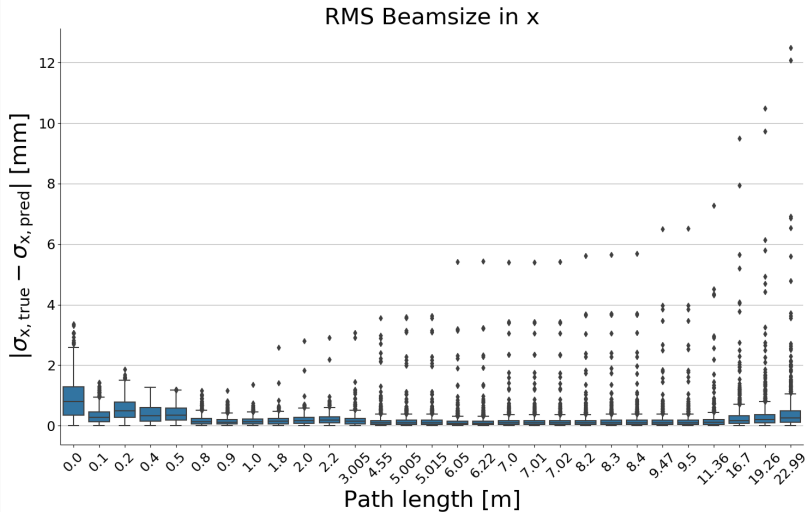
Design variables

Bound	IBF [A]	IM [A]	GPHASE [°]	ILS1 [A]	ILS2 [A]	ILS3 [A]	charge [nC]	λ [ps]	SIGXY [mm]
Lower	450	150	-50	0	0	0	1	0.3	1.5
Upper	550	260	10	250	200	200	5	2	12.5

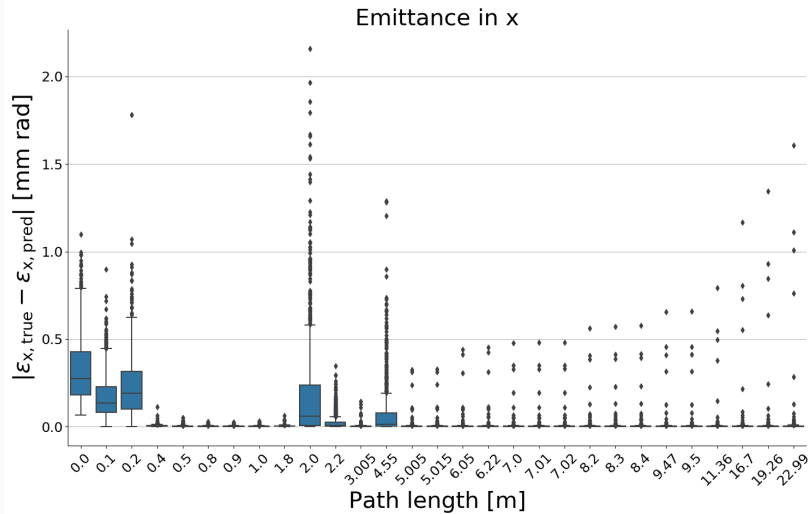
Cavities 1, 2, 3, 5: 25MV

Cavities 4 and 6: Off

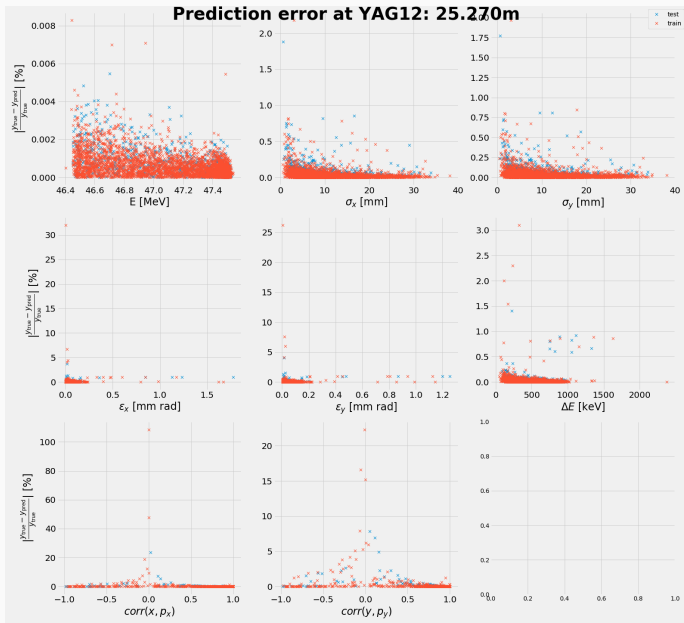
Model performance: σ_x



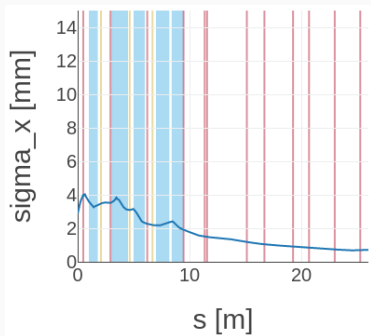
Model performance: ϵ_x



Model performance: Error at the last YAG screen



Good configuration after playing around



IBF [A]	498	[450, 550]	IM [A]	230	[150, 260]
GPHASE [°]	8	[-50, 10]	ILS1 [A]	0	[0, 250]
ILS2 [A]	0	[0, 200]	ILS3 [A]	0	[0, 200]
Bunch charge [nC]	1	[1, 5]	lambda [ps]	0.3	[0.3, 2]
Laser radius [mm]	1.5	[1.5, 12.5]			

$$4 \text{ mm} \leq \sigma_x(s) \leq 5 \text{ mm}, s \in 0., 0.25, 0.5, 0.75, \dots, 10.0 \text{ m}$$

$$\text{Corr}(x, p_x) \leq 0 \text{ at } 26 \text{ m}$$

$$\min |\sigma_x(26 \text{ m}) - 0.5 \text{ mm}|$$

