Validation of Models

Verify that the parameters $x_1, \ldots x_m$ in the EDF functional

$$\mathcal{E}(x) = \sum_{k=1}^{m} \sigma_k \| f_k(x) - y_k \|_2^2,$$

provide an acceptable fit to the nuclear data and determine a minimal set of parameters.

Proposal. Develop a reduced model (use the elements in the lower half of the table?) to validate the model.

Computational Noise

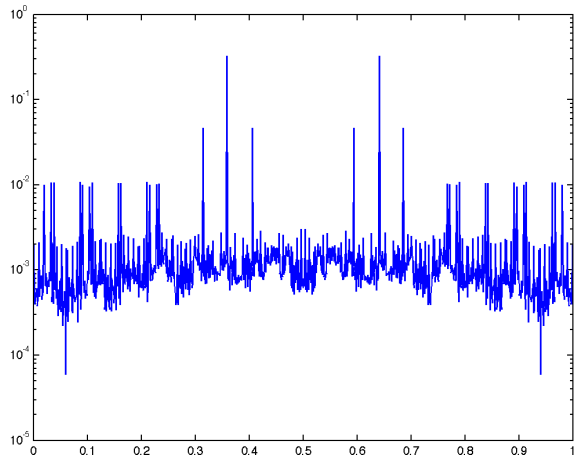
A first step in the validation process would be to determine the computational noise in the model.

Example. An adaptive (Simpson's) quadrature is used to evaluate

$$f(\lambda) = \int_0^1 \frac{1}{(x-\lambda)^2 + \alpha^2}\, dx, \qquad \alpha = 0.001$$

$tol = 10^{-3}$

$\varepsilon_f = 2.5\, 10^{-3}$



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