

MATH 648 Q, HW 2

- 1) Compute (formally) the Hausdorff dimension of a unit cube $[0, 1]^d$ in \mathbb{R}^d .
- 2) Prove that the Hausdorff dimension of the ternary Cantor set is $\log_3(2)$.
- 3) Generate the datasets described in Section 3.4.1 of the textbook. Use the 6 dimension estimation methods contained in the Matlab Toolbox for Dimensionality Reduction:

http://homepage.tudelft.nl/19j49/Matlab_Toolbox_for_Dimensionality_Reduction.html

Draw conclusions.