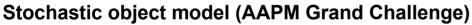Rule-out tests for deep generative models:

Stochastic context models

Dataset: https://doi.org/10.7910/DVN/HHF4AF,

Evaluation code: https://github.com/comp-imaging-sci/scms-dgm-evaluation

Stochastic object model (AAPM Grand Challenge)
Dataset: https://doi.org/10.13012/B2IDB-2773204_V3

Assessing the capacity of a denoising diffusion probabilistic model to reproduce spatial context. Deshpande, R.*, ¨Ozbey, M.*, Li, H., Anastasio, M.A.†, and Brooks, F.J.†, 2024. IEEE Transactions on Medical Imaging 43 (10), 3608-3620. (∗, †: equal contribution.)

A method for evaluating deep generative models of images for hallucinations in high-order spatial context. Deshpande, R., Anastasio, M.A. and Brooks, F.J., 2024. Pattern Recognition Letters 186, 23-29.

Report on the AAPM grand challenge on deep generative modeling for learning medical image statistics. Deshpande, R.*, Kelkar V.*, Gotsis D., Kc P., Zeng R., Myers K.J., Brooks F.J., Anastasio M.A., 2025. Medical Physics 52 (1), 4-20.