

NCAC Annual Meeting

Przemysław Figura

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- Development of code used to software inject artificial signals into real data.
- Calibration of code parameters basing on hardware injected signals persistent in real data.

Impact of data incompleteness on F-statistic images

Signal with 100% data completion:



Signal with 50% data completion with a single gap:



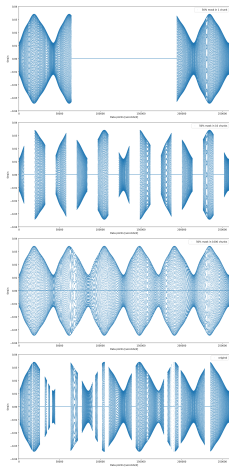
Signal with 50% data completion with gaps in 10 chunks:



Signal with 50% data completion with gaps in 1000 chunks:



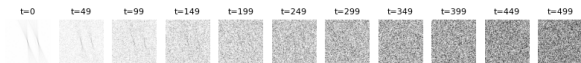
Signal with real O3 data gaps structure:



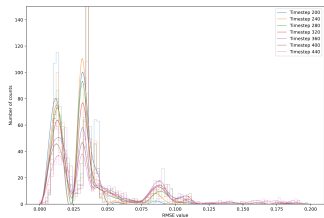
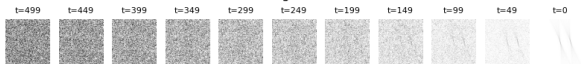
F-statistic analysis using Denoising Diffusion Probabilistic Models (DDPM)

- Gradual noise addition to F-statistic signal image.
- Neural network training.
- Inference – denoising of the signal.

Forward Diffusion Process



Denoising Process



Thank you. :-)