

Quantization of Bandlimited Functions on the 2D – Torus

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The study of quantization techniques for bandlimited functions has become increasingly important both for the results obtainable in some engineering applications (A/D converters, Digital Halftoning, Imaging), and for some Machine Learning and Deep Learning applications. The main issue is highlighted when trying to apply these algorithms to functions defined on closed manifolds, as cuts need to be introduced to apply them, and the schemes will typically not yield good reconstruction along the cuts.

This talk will explore the problem of quantization and reconstruction of a bandlimited signal on the 2D torus, highlighting how changing the sampling scheme can avoid the presence of artifacts generated by Sigma-Delta schemes.

This is joint work with Professor Felix Krahmer.