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Title: Fourier Interpolation and Uniqueness

Abstract:
I will begin with a beautiful and surprising Fourier interpolation formula discovered by Danilo Radchenko and Marina Viazovska. Their formula enables the reconstruction of a function using its values and the values of its Fourier transform on a particular sequence of points. It yields, probably, the first example of Fourier uniqueness pairs. Their work relied on the theory of modular forms.

Then I will shift to an analytic approach to the detection and study of Fourier uniqueness and non-uniqueness pairs, as well as interpolation formulas.

The talk is based on ongoing work with Fedor Nazarov and Aleksei Kulikov (a part of which can be found in arXiv:2306.14013)