Exponential sums and tensor approximation
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In this talk we discuss several applications of exponential sum approximation for the construction of low rank tensor approximations to the solutions of certain high-dimensional operator equations.
In contrast to earlier approaches, where both the domain and range of the operator is finite dimensional and endowed with the same tensor product norm, we focus on cases where the (infinite dimensional) operator under consideration is an isomorphism between a pair of spaces which are different and not endowed with cross norms. In particular, we indicate some implications on the tensor sparsity of solutions to high dimensional diffusion problems and their tractability as well as on preconditioning in the context of adaptively generating low-rank approximate solutions to such problems.