

High-dimensional and infinite-dimensional hyperbolic crosses and their applications in approximation and uncertainty quantification.

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This talk is a brief overview on recent results on estimation of the cardinality of high-dimensional and infinite-dimensional hyperbolic crosses, and applications in estimation of n -widths and ε -dimensions in approximation, tractability of high-dimensional and infinite-dimensional problems, and uncertainty quantification problems. It is mainly based on papers joint with Tino Ullrich, Alexey Chernov and Michael Griebel.