Exact matrix completion based on low rank Hankel structure in the Fourier domain

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Time: 2021-03-11, 16:10 to 17:00

Location: Rm 1801, Guanghua East Tower

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Abstract: Matrix completion is about recovering a matrix from its partial revealed entries, and it can often be achieved by exploiting the inherent simplicity or low dimensional structure of the target matrix. For instance, a typical notion of matrix simplicity is low rank. In this talk we will study matrix completion based on another low dimensional structure, namely the low rank Hankel structure in the Fourier domain. It is shown that matrices with this structure can be exactly recovered by solving a convex optimization program provided the sampling complexity is nearly optimal.