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Henry Adams, Lara Kassab* (lara.kassab@colostate.edu) and **Deanna Needell**. *Matrix Completion for Structured Observations Using Iteratively Reweighted Algorithms*. Preliminary report.

The task of filling-in or predicting missing entries of a matrix from a subset of known entries is known as *matrix completion*. In today's data-driven world, data completion is essential whether it is the main goal or a pre-processing step. In recent work, a modification to the standard nuclear norm minimization for matrix completion have been made to take into account the *structural differences* between observed and unobserved entries. One example of such structural difference is when the unobserved entries have lower magnitudes than the observed entries or are sparse. Standard semidefinite programming tools do not work efficiently for solving large nuclear norm minimization problems. We propose adjusting an Iteratively Reweighted Least Squares (IRLS) algorithm for low-rank matrix completion to take into account structural differences between observed and unobserved entries. (Received September 06, 2019)