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Bernhard G Bodmann*, 651 Phillip G Hoffman Hall, Mathematics Department, University of Houston, Houston, TX 77204, and **Nathaniel Hammen**. *Stability of phase retrieval with low-redundancy frames.*

This work concerns the recovery of vectors from magnitudes of frame coefficients when the frames have a low redundancy, meaning a small number of frame vectors compared to the dimension of the Hilbert space. In a previous paper, $4d - 4$ suitably chosen frame vectors were shown to be sufficient to uniquely determine each complex vector in d dimensions, up to an overall unimodular constant, from the magnitudes of its frame coefficients. Here, we show that semidefinite programming allows perfect reconstruction if the number of frame vectors is $6d - 3$. In this case, we derive explicit error bounds for approximate recovery when the measured magnitudes are corrupted by noise. In contrast to stability results in the previous paper, these estimates are uniform over the set of all unit-norm input vectors. (Received September 09, 2014)