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**Joshua Siktar\*** (jsiktar@andrew.cmu.edu) and **Steven J Miller**. *Generalizations of Zeckendorf's Theorem to Two-Dimensional Sequences*. Preliminary report.

Zeckendorf proved that every positive integer can be written uniquely as a sum of non-adjacent Fibonacci numbers. This is called the Zeckendorf decomposition, and has been generalized to many sequences, especially those arising from recurrence relations of fixed depth and constant non-negative integer coefficients. We generalize results in the subject to certain two-dimensional sequences, in particular proving Gaussianity for the distribution of the number of summands. (Received September 26, 2017)