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Pari L Ford* (fordpl@unk.edu), NE, and **Minerva Catral, Pamela Harris, Steven J Miller** and **Dawn Nelson**. *This Fibonacci Quilt Sequence*. Preliminary report.

Abstract: The (s, b) -Generacci sequences are constructed by listing the numbers that cannot be decomposed as a sum of previous entries following a generalized Zeckendorf condition: the entries are partitioned into bins of size b and a legal decomposition prohibits having two summands from any s consecutive bins. In this talk we expand to a 2-dimensional construction using the Fibonacci quilt, where the entries of our sequence are chosen so that a_n is the smallest number that cannot be written as a sum of earlier entries of the sequence such that no two elements of the decomposition share a wall in the quilt. The resulting numbers satisfy a linear recurrence where the leading term is zero, and thus previous results do not apply. This leads to some interesting complications and new behavior. In particular, while every number is legally decomposable most numbers have multiple choices; among other results we show that the average number of decompositions grows exponentially fast and that the greedy algorithm yields a legal decomposition for approximately 92% of the integers.

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