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Finite Approximations of the Ammann-Beenker Tiling

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The Ammann-Beenker tiling is a non-periodic tiling which can be generated either by an aperiodic set of prototile as done by Robert Ammann in the 1970's, or by the cut-and-project method as done independently by F.P. M. Beenker. By using the inflate and subdivide method we construct approximations of the Ammann-Beenker tiling. This representation can be used to construct a program that generates an approximation of the Ammann-Beenker tiling. We also study the dual graph of an approximate Ammann-Beenker tiling.