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Franz Gähler* (gaehler@math.uni-bielefeld.de) and **Johan Nilsson**. *Primitive substitutions for higher-dimensional paper-folding structures.*

Paper-folding sequences are one of the well-known examples of aperiodically ordered structures. Some are known to be generated by a primitive substitution, which allows to prove important properties like unique ergodicity or pure point spectrum of the associated dynamical systems.

Recently, also higher-dimensional analogues of paper-folding structures have been proposed [S.I. Ben-Abraham et al., *Acta Cryst.* (2013) A69, 123-130], constructed via a recursive procedure (not a substitution). We show here that, in any dimension, these structures can also be generated by a primitive substitution. This allows us to prove that they give rise to dynamical systems (via the translation action on the hull) which are uniquely ergodic and have pure point spectrum. Knowledge of a generating substitution also allows to compute topological and dynamical invariants, as well as the complexity of these higher-dimensional paper-folding structures. (Received January 27, 2014)