

Finding tiling spaces in the most curious places

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We consider three types of dynamical systems: shifts of finite type (SFT), substitution tilings spaces (STS), and hyperbolic toral automorphisms (HTA). A Markov partition on a HTA gives a finite-to-one factor map from a SFT onto the HTA. We investigate when such a factor map can be split as a composition of u - and s -bijective maps. It has already been shown that if the tiling system, given by the Markov partition, satisfies the forcing the border condition, then a splitting exists. We will show a partial converse, namely, if a splitting exists then the Markov partition must satisfy a boundary condition.