

Riddles of the sphinx tilings

Greg Huber¹ and Walter Trump²

¹Chan Zuckerberg Biohub, San Francisco, California, USA ²Department of Physics, Gymnasium Stein, Stein, Germany (retired)

The sphinx tile is a simple, non-symmetrical shape which comes in left and right enantiomers and is proposed as a building block to explore chiral interactions in crowded spaces. The basic theory of sphinx tilings is lacking, so we have developed a succession of exact methods to find these tilings within finite frames. For large frames, the numbers of configurations become so large that statistical mechanics obtains and Monte Carlo methods are required. Our explorations raise a number of new mysteries which will be discussed.

