Minisymposium 4 - Spectral Theory and Ergodic Operators

Combinatorial and spectral properties of pinwheel patterns

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The classic pinwheel tiling of the plane, which is due to Conway and Radin, is defined via a primitive substitution rule based on one triangle. It contains congruent copies of this triangle in infinitely many orientations, wherefore the hull has continuous rotation symmetry. Beyond some general results on compactness, unique ergodicity and minimality, not much is known about this still somewhat enigmatic tiling.
In this talk, based on joint work with U. Grimm and D. Frettlöh, an alternative substitution rule is introduced that permits the derivation of several hitherto unknown properties and results on the combinatorics and diffraction of this tiling, together with some open conjectures.