

**Title:** Fuglede's tiling-spectrality conjecture for convex domains

**Abstract:** Which domains in Euclidean space admit an orthogonal basis consisting of exponential functions? For example, the cube is such a domain, but the ball is not. In 1974, Fuglede made a fascinating conjecture that these domains could be characterized geometrically as the domains which can tile the space by translations. While this conjecture was disproved for general sets, in a recent paper with Máté Matolcsi we did prove that Fuglede's conjecture is true for convex domains in all dimensions. I will survey the subject and discuss this result.