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Exponential bases and frames: the return of the Fuglede Conjecture

We shall explore exponential bases and frames both in Euclidean space and vector spaces over finite fields. In the process we shall prove a recent result due to Iosevich, Mayeli and Pakianathan establishing the Fuglede Conjecture in \mathbb{Z}_p^2 , namely that a subset of \mathbb{Z}_p^2 has an orthogonal basis of characters if and only if it tiles \mathbb{Z}_p^2 by translation. Different types of interaction between analytic, combinatorial and algebraic methods shall be emphasized throughout.