

LATTICE BOUNDED DISTANCE EQUIVALENCE FOR 1D DELONE SETS WITH FINITE LOCAL COMPLEXITY

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Abstract. Spectra of suitably chosen Pisot-Vijayaraghavan numbers represent non-trivial examples of self-similar Delone point sets of finite local complexity, indispensable in quasicrystal modeling. For the case of quadratic Pisot units we characterize, depending on digits in the corresponding numeration systems, the spectra which are bounded distance to an average lattice. Our method stems in interpretation of the spectra in the frame of the cut-and-project method. Such structures are coded by an infinite word over a finite alphabet which enables us to exploit combinatorial notions such as balancedness, substitutions and the spectrum of associated incidence matrices.

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