Nonperiodic Tiling

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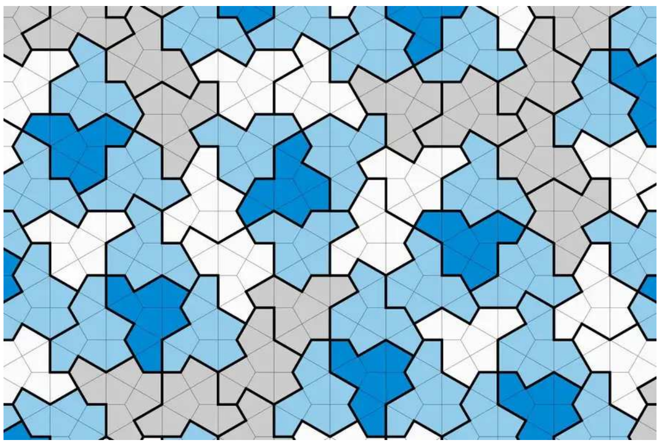
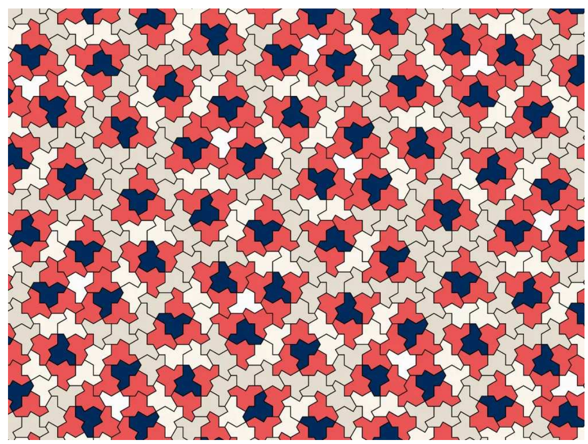
The article "Escher Sketch" [1] considered only periodic tilings of a plane with a single type of tile.[1] Already in 1976, Penrose had demonstrated nonperiodic tilings, based on 2 different tiles [2, 3, 4]. Recently, nonperiodic tilings with only a single (14-sided) tile have been demonstrated [5, 6].

References

[1] K. McDonald, *Escher Sketch*, JACG Newsletter **4**(11), 18 (1985),
http://kirkmcd.princeton.edu/examples/escher.pdf

[2] R. Penrose, *Set of Tiles for Covering a Surface*, US Patent 4,133,152 (filed Jan. 24, 1976), http://kirkmcd.princeton.edu/examples/patents/penrose_us4133152_76_tiles.pdf

[3] R. Penrose, *Pentaplexity*, Eureka No. 39, 16 (1978),
http://kirkmcd.princeton.edu/examples/mechanics/penrose_eureka_39-apr_16_78.pdf

[4] R. Penrose, *Pentaplexity*, Math. Intell. **2** 32 (1979),
http://kirkmcd.princeton.edu/examples/mechanics/penrose_mi_2_32_79.pdf

[5] D. Smith *et al.*, *An aperiodic monotile* (May 2023), https://arxiv.org/abs/2303.10798

[6] D. Smith *et al.*, *A chiral aperiodic monotile* (May 2023),
https://arxiv.org/abs/2305.17743

[1] Of course, each tile can be partitioned into many subtiles. Several of the illustrations of the 17 basic types of periodic tilings in [1] were shown with 2 subtiles.