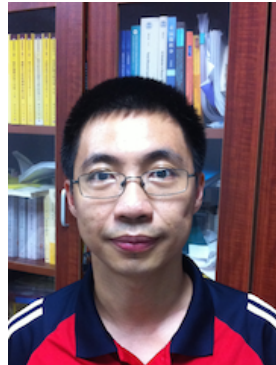




Wang tiles and aperiodic tiling



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23 October 2017 (Monday), 3pm to 4pm
Room 416, School of Mathematics, Sun Yat-sen University

In order to study the decidability of a fragment of first-order logic, Hao Wang introduced the Wang tiles in 1961. A Wang tile is a square tile with a color on each side. Wang asked whether there exists a set of Wang tiles that can tile the entire plane only non-periodically, with the color constraints. This opened a new research field of aperiodic tiling, which led to the discovery of a set of aperiodic tiles consisting of just two polygonal tiles by Roger Penrose in 1974. In this talk, we survey some recent results and open problems on aperiodic tiling.