Escape of Mass of the Thue-Morse Sequence

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One way to study the distribution of quadratic number fields is through the evolution of continued fraction expansions. In the function field setting, it was shown by de Mathan and Teullie that given a quadratic irrational Θ, the degrees of the periodic part of the continued fraction of $t^n\Theta$ are unbounded. Paulin and Shapira improved this by proving that quadratic irrationals exhibit partial escape of mass. Moreover, they conjectured that they must exhibit full escape of mass. We show that the Thue Morse sequence is a counterexample to their conjecture. In this talk we shall discuss the technique of proof as well as the connection between escape of mass in continued fractions, Hecke trees, and number walls. This is part of ongoing work joint with Erez Nesharim.