Some Strong Consequences of the Sato-Tate Conjecture

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Abstract

Recently, one of the breakthrough results in mathematics is the proof of the Sato-Tate conjecture by Taylor, Barnet-Lamb, Geraghty and Harris. Let f be a cusp form of weight $k + 1/2$ and at most quadratic nebentype character whose Fourier coefficients $a(n)$ are all real. Then Bruinier and Kohnen suggested that the $a(n)$'s are equidistributed. In this talk, we will give some results on the Bruinier-Kohnen sign equidistribution conjecture using the Sato-Tate conjecture which is a theorem now. Furthermore, we will explain current position of the conjecture and conclude with some open problems in theory of automorphic forms.

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