

1145-11-1363 **Seoyoung Kim*** (seoyoung_kim@brown.edu), 189 Waterman Street, Unit 3, Providence, RI
02906. *The Sato-Tate conjecture and Nagao's conjecture.*

Nagao's conjecture relates the rank of an elliptic surface to a limit formula arising from a weighted average of fibral Frobenius traces, and it is further generalized for smooth irreducible projective surfaces by Hindry and Pacheco. We show that the Sato-Tate conjecture for abelian surfaces studied by Fité, Kedlaya, Rotger, Sutherland implies Nagao's conjecture for certain twist families hyperelliptic curves of genus 2. Moreover, one can relate analogous discussions for higher genus g to the nonvanishing result on the symmetric power L -functions, from which analogous proof will hold for certain cases. (Received September 25, 2018)