1145-11-74   **Seoyoung Kim*** (`margaleth7@gmail.com`), 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 M. Hindry and A. Pacheco. We show that the Sato-Tate conjecture for abelian surfaces studied by F. Fité, K. Kedlaya, V. Rotger, A V. Suthereland 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 July 19, 2018)