## **Research Highlight: The Automorphic Discrete Spectrum of Mp(2n)**

## Work of Professor GAN Wee Teck

The automorphic discrete spectrum of the classical groups (symplectic, orthogonal and unitary groups) has been classified by the work of Arthur, Mok and Kaletha-Minguez-Shin-White. In the papers [1] and [2], Prof. Gan and Prof. Ichino of Kyoto University extended this classification to the nonlinear metaplectic groups Mp(2n). This is an extension to higher rank metaplectic groups of the Shimura correspondence between integer weight and half-integer weight modular forms, in its automorphic formulation due to Waldspurger.

In [1], the automorphic discrete spectrum is shown to decompose into near equivalence classes indexed by elliptic Arthur parameters, and the fine structure of each near equivalence class associated to tempered or generic Arthur parameters is described in terms of local and global packets and a multiplicity formula. An intriguing part of this multiplicity formula is the role played by a certain global root number. In a paper under preparation [3], this description is being extended to all Arthur parameters for Mp(4).

## **Reference:**

[1] W.T. Gan and A. Ichino, *The Shimura-Waldspurger correspondence for Mp*<sub>2n</sub>, Annals of Math. 188 (2018), 965-1016.

[2] W.T. Gan and A. Ichino, *On the irreducibility of some induced representations of real reductive Lie groups*, Tunisian J. of Math. Vol. 1, No. 1 (2019), 73-107.

[3] W.T. Gan and A. Ichino, *The automorphic discrete spectrum of Mp(4)*, in preparation.