

June Huh

(Institute for Advanced Study and Princeton University)

A tropical approach to a Hodge conjecture for positive currents

Demailly showed that the Hodge conjecture is equivalent to the statement that any closed current with rational cohomology class can be approximated by linear combinations of integration currents associated to subvarieties, and asked whether any strongly positive closed current with rational cohomology class can be approximated by positive linear combinations of integration currents associated to subvarieties. Using tropical geometry, we construct a strongly positive closed current on a smooth projective variety that does not satisfy the latter statement. Joint work with Farhad Babae.