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**Tim Huber\*** (hubertj@utpa.edu), University of Texas - Pan American, and **Matthew Levine** (malevine@broncs.utpa.edu), University of Texas - Pan American. *Elliptic interpolation of Hecke Eisenstein Series.*

Recently, S. Cooper has given a novel construction of Hecke Eisenstein series for the congruence subgroup  $\Gamma_0(n)$  by making use of the Jacobi triple product identity and properties of Gauss sums. In this lecture, an alternative formulation is given for Hecke Eisenstein series in terms of derivatives of the Weierstrass  $\wp$ -function. The Eisenstein series associated with primitive Dirichlet character  $\chi$  are expressed as linear combinations of Weierstrass values with coefficients which are Gauss sums. These identities may be used to deduce interesting new information about Eisenstein series and associated theta functions. In particular, such constructions lead to a new differential system for quintic theta functions and to the realization of symmetry in corresponding parameterizations for quintic Eisenstein series. (Received September 10, 2012)