

1067-Z1-1882 **T Hudson Harper*** (tharper07@gmail.com), 1527 Highland Gate Point, Hoover, AL 35244.
New Ramanujan congruences for partition related eta-quotients.

In a 1919 paper, Ramanujan proved his three eponymous congruences for the integer partition function using identities of q -series. Since then, combinatorial identities, properties of Eisenstein series, and other methods have been employed to prove these results. In 1981, Serre proved there exists a finite list of lacunary powers of the eta function. From these lacunary functions, Ramanujan's congruences can be proven in a new way. In this talk I will demonstrate how congruences, similar to Ramanujan's, of general partition functions can be constructed and proven using the lacunarity of specific eta-quotients. I will also discuss questions analogous to those for the integer partition function like the completeness of the classification of Ramanujan congruences. (Received September 22, 2010)