1017-11-108 **Antun Milas*** (amilas@math.albany.edu). *Congruences of modular forms and vertex algebras.* Preliminary report.

The modular invariance of genus one characters is arguably the most interesting feature of every rational conformal field theory. By using the Verlinde formula it can be shown that every genus one character is in fact a meromorphic function on $X(N)$, for a suitable N. This raises a question whether some deeper properties of rational vertex algebras are hidden in the arithmetic and geometry of modular curves. In view of the well-known connection between Weierstrass points on modular curves and Wronskians of weight 2 cusp forms, it is natural to investigate the number theoretic properties of Wronskians of genus one characters and their derivatives. In my talk I will discuss certain congruences among these Wronskians and show that in many important instances their quotients classify supersingular elliptic curves in characteristic p. Interestingly, these congruences can also be obtained by using representation theoretic methods. Some conjectures will also be presented. (Received February 16, 2006)