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A.O.L. Atkin, W.C. Li and L. Long* (linglong@iastate.edu), 396 Carver Hall, Iowa State University, Ames, IA 50011. *Atkin and Swinnerton-Dyer congruence and the modularity for certain noncongruence cuspforms.*

Atkin and Swinnerton-Dyer conjectured that coefficients of suitably chosen noncongruence modular forms, like the coefficients of congruence eigenforms, satisfy three term recursive relations, but such recursions are in a congruence sense.

We study an index 4 noncongruence subgroup of a level 5 congruence subgroup and show that their conjecture holds for the weight 3 cuspforms for this noncongruence group. Moreover, we show that the attached l -adic representation ρ to this space of cuspforms is modular. Namely, there is an automorphic L-function whose local factors agree with those of ρ at all primes $p \neq l$. (Received September 27, 2005)