1012-14-148   **Adrian Clingher*** (`clingher@math.stanford.edu`), Department of Mathematics, Stanford University, Stanford, CA 94305, and **Charles F Doran**. *On a Family of Quartic K3 Surfaces.* Preliminary report.

I will report on work in progress with C. Doran on the subject of K3 surfaces with lattice polarizations of type $H \oplus E_8 \oplus E_8$ or $H \oplus E_8 \oplus E_7$. By a version of Global Torelli Theorem, these kinds of surfaces are classified by a set of modular invariants (two in the first case and three in the second case) much in the same way elliptic curves over the complexes are classified by the J-invariant. I will present a method of computing these invariants when the surface X is given as the minimal resolution of a quartic in P^3. The method is based on the explicit construction of a Shioda-Inose structure on X. I will also discuss the relevance of the modular invariants so computed from the point of view of the F-theory/heterotic string duality in eight dimensions." (Received September 18, 2005)