1106-05-1610 **Vivian Kuperberg*** (vzk2@cornell.edu). *Hadamard matrices modulo p and small modular Hadamard matrices.*

We use modular symmetric designs to study the existence of Hadamard matrices modulo certain primes. We solve the 7-modular and 11-modular versions of the Hadamard conjecture for all but a finite number of cases. In doing so, we state a conjecture for a sufficient condition for the existence of a p-modular Hadamard matrix for all but finitely many cases. When 2 is a primitive root of a prime p, we conditionally solve this conjecture and therefore the p-modular version of the Hadamard conjecture for all but finitely many cases when $p \equiv 3 \pmod 4$, and prove a weaker result for $p \equiv 1 \pmod 4$. Finally, we look at constraints on the existence of m-modular Hadamard matrices when the size of the matrix is small with respect to m. (Received September 14, 2014)