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**Hidehiko Kamiya, Akimichi Takemura\*** (takemura@stat.t.u-tokyo.ac.jp) and **Hiroaki Terao**. *Periodicity of hyperplane arrangements with integral coefficients modulo positive integers.*

We study central hyperplane arrangements with integral coefficients modulo positive integers  $q$ . We prove that the cardinality of the complement of the hyperplanes is a quasi-polynomial. This result is useful for determining the characteristic polynomial of the corresponding real arrangement. We also prove that intersection lattices modulo  $q$  are periodic except for a finite number of  $q$ 's. Our proof is based on the theory of elementary divisors. (Received January 29, 2008)