1030-94-171   **Peter Sin** and **Qing Xiang***, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716. *On the dimensions of certain LDPC codes based on q-regular bipartite graphs.*

An explicit construction of a family of binary low-density parity check (LDPC) codes called $LU(3, q)$, where q is a prime power, was recently given by Kim, Peled, et al. A conjecture was made for the dimensions of these codes when q is odd. We prove this conjecture by using the geometry of 4-dimensional symplectic vector space and the action of the symplectic group and its subgroups. (Received July 31, 2007)