1077-68-1207 **Maggie Habeeb*** (mhabeeb@gc.cuny.edu), CUNY Graduate Center, Mathematics Department, New York, NY 10016, and **Delaram Kahrobaei**. *On the Dimension of Matrix Representations of Nilpotent Groups.*

It is well known that any polycyclic group, and hence any finitely generated nilpotent group, can be embedded into $GL_n(\mathbb{Z})$ for an appropriate $n \in \mathbb{N}$; that is, each element in the group has a unique matrix representation. An algorithm to determine this embedding was proposed by W. Nickel. In this talk, we explain the algorithm, give its complexity, give a bound on the dimension of the matrices produced and provide a slightly more efficient algorithm than the one proposed by W. Nickel. (Received September 18, 2011)