1096-05-2276   **Shaofei Du**, **Roman Nedela** and **Martin Skoviera*** (skoviera@dcs.fmph.uniba.sk),
Department of Computer Science, Comenius University, 842 48 Bratislava, Slovak Rep. *Bounding the order of a regular map with nilpotent automorphism group.*

Several interesting classes of graph embeddings giver rise to regular maps with nilpotent automorphism group. Among them are, for example, regular embeddings of complete bipartite graphs $K_{n,n}$ or n-cubes Q_n where n is a power of 2. We investigate regular maps with nilpotent automorphism group in detail and show that every orientably regular map whose automorphism group is nilpotent of class c has at most $2^{2^{c-1}}$ vertices. The bound can be reached only for $c \leq 3$, the largest of the extremal maps being a toroidal embedding of Q_4. For $c \geq 4$, the maximal order of a nilpotent orientably regular map of class c remains unknown. (Received September 17, 2013)

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