1003-05-506 **Alexandra Ovetsky*** (`aovetsky@princeton.edu`), 611 Alburger Ave., Philadelphia, PA 19115.
On the Well-Coveredness of Cartesian Products of Graphs.

A graph G is *well-covered* if every maximal independent set has the same cardinality. This paper investigates when the Cartesian product of two graphs is well-covered. We prove that if G and H both belong to a large class of graphs that includes all non-well-covered triangle free graphs and most well-covered triangle free graphs, then $G \times H$ is not well-covered. We also show that if G is not well-covered then neither is $G \times G$. Finally, we show that $G \times G$ is not well-covered for all graphs of girth at least 5 by introducing super well-covered graphs and classifying all such graphs of girth at least 5. (Received September 17, 2004)