1056-05-1715 **Glenn G Chappell** (chappellg@member.ams.org) and **Michael J Pelsmajer*** (pelsmajer@iit.edu), 10 W. 32nd St., E1 208, Chicago, IL 60616. *Maximum Induced Forests in Graphs of Bounded Treewidth.*

Let $f_{k,d,n}$ be the maximum i such that every n-vertex graph of treewidth k contains an i-vertex induced forest of maximum degree at most d. We prove that for all $k, d \geq 2$ and for all $n \geq 1$, $f_{k,d,n} \geq \lceil (2dn+2)/(kd+d+1) \rceil$ unless $G \in \{K_{2,3}, K_{1,1,3}\}$ and $k = d = 2$. We give examples that show that the bound is sharp to within 1.

We conjecture that $f_{k,1,n} \geq \lceil 2n/(k+2) \rceil$, which would be sharp to within 1, and we prove it for $k = 2, 3$. For $k \geq 4$, we show that $f_{k,1,n} \geq (2n+2)/(2k+3)$. We also determine $f_{k,d,n}$ when $d = 0$ or $k = 0, 1$. Finally, we consider an analogue of $f_{k,d,n}$ for graphs on a given surface, rather than graphs of a given treewidth. (Received September 22, 2009)