1043-05-71 **Zevi Miller*** (millerz@muohio.edu), Department of Mathematics and Statistics, Miami University, Oxford, OH 45056, **Tao Jiang**, Department of Mathematics and Statistics, Miami University, Oxford, OH 45056, and **Daniel Pritikin** (pritikd@muohio.edu), Department of Mathematics and Statistics, Miami University, Oxford, OH 45056. *Separation number of trees.* Preliminary report.

Let G be a graph on n vertices. Given a bijection $f : V(G) \to \{1, 2, \ldots, n\}$, let $|f| = \min\{|f(u) - f(v)| : uv \in E(G)\}$. The *separation number* $s(G)$ of G is then $\max\{|f|\}$ over all such bijection f of G. We study the case when G is a forest, obtaining the following results.

1. Let F be a forest in which each component is a star. Then $s(F) = \frac{n-\mu}{2}$, where μ is the minimum value of $||X| - |Y||$ over all bipartitions (X, Y) of F.

2. Let d be the maximum degree of a tree T on n vertices. Then

a) $s(T) \geq \frac{n}{2} - C_1\sqrt{nd}$

b) $s(T) \geq \frac{n}{2} - C_2 d^2 log_d n$,

where C_1 and C_2 are constants as $n \to \infty$.

We also give constructions showing that the bound a) is asymptotically tight when d is in the range $n^{\frac{1}{3}} \leq d \leq \frac{n}{3}$, while b) is asymptotically tight when d is in the range $n^q \leq d \leq n^{\frac{1}{3}}$ where $0 < q < \frac{1}{3}$ is any fixed constant and when d is an absolute constant.

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