1122-05-358 **Jill Faudree*** (jrfaudree@alaska.edu), Department of Mathematics and Statistics, Fairbanks, AK 99709, and **Ron Gould**, **Michael Jacobson** and **Brent Thomas**. *Saturation Number and Saturation Spectrum of Brooms.*

Let H be a graph. A graph G is *H-saturated* if G contains no copy of H as a subgraph, but for each edge e in $\overline{G}$, the graph $G+e$ contains a copy of H. The saturation number of H, written $sat(n,H)$, is the minimum number of edges in an H-saturated graph with n vertices (assuming $n \geq |V(H)|$). A broom, $B_{s,t}$, is a tree on $s+t$ vertices formed by identifying the end vertex of a path on s vertices with the center vertex of a $K_{1,t}$. We determine $sat(n,B_{s,t})$ for all brooms such that $t \geq 6$.

The *saturation spectrum* for a graph H, which is denoted $spec(n,H)$, is the set of sizes of H-saturated graphs between $sat(n,H)$ and $ex(n,H)$, the extremal number of H. We prove that the saturation spectrum for a broom contains every integer from $sat(n,H)$ to within a constant of $ex(n,H)$. Additionally, we determine completely the saturation spectrum for a number of small brooms.

Some interesting examples and open problems will be presented.

This is joint work with Ron Gould, Mike Jacobson, and Brent Thomas. (Received August 16, 2016)