1116-VF-1987 **Miaomiao Han*** (mahan@mix.wvu.edu) and **Rong Luo** (rongluo2007@gmail.com). *Neighbor sum distinguishing total coloring of graphs.* Preliminary report.

A proper k-total coloring of a graph $G$ is a mapping from $V(G) \cup E(G)$ to $\{1, 2 \cdots, k\}$ such that no adjacent or incident elements in $V(G) \cup E(G)$ receive the same color. Let $m(v)$ denote the sum of colors on the edges incident with $v$ and the color on vertex $v$. A proper $k$-total coloring of $G$ is called neighbor sum distinguishing if $m(u) \neq m(v)$ for each edge $uv \in E(G)$. Let $\chi^t_\Sigma(G)$ be the neighbor sum distinguishing total chromatic of a graph $G$. Pilśniak and Woźniak proposed the conjecture that for any graph $G$, $\chi^t_\Sigma(G) \leq \Delta(G) + 3$. In this paper, we obtain that if $G$ is a graph with treewidth $l \geq 3$, and $\Delta(G) \geq \max\{8, 3l - 2\}$, then $\chi^t_\Sigma(G) \leq \Delta(G) + l - 1$. (Received September 21, 2015)