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Kyle T Siegrist* (siegrist@math.uah.edu), Department of Mathematical Sciences, University of Alabama in Huntsville, Huntsville, AL 35899. *Renewal type processes on partially ordered sets.* Preliminary report.

Let $G = (V, \preceq)$ be a partially ordered set such that V is countable, there exists a minimum element $a \in V$, and $\{u \in V : u \preceq v\}$ is finite for each $v \in V$. Suppose that $\{X_v : v \neq a\}$ is a collection of independent, identically distributed, nonnegative random variables. We think of X_v as the time required to perform a job associated with v , but the job at v cannot begin until all jobs at $u \prec v$ are finished. The natural random variables associated with this model are the time when all jobs in a given subset of V are completed, and the set of completed jobs at a given time. These variables are studied in terms of the structure of G , and several stochastic comparison results are obtained. The common model for sequential broadcasting in trees is a special case, and in this context, we study the broadcast center of a tree. (Received October 02, 2000)