1047-05-191   **Eva Czabarka*** (`czabarka@math.sc.edu`), **Laszlo A Szekely** and **Todd J Vision**. *Minimizing the number of episodes on a species tree - an extension of Gallai's theorem on intervals.* Preliminary report.

In 1996 Guigo et al. posed the following problem: for a given species tree and a number of gene trees, what is the minimum number of duplication episodes, where several genes can undergo duplication together to generate the observed situation (gene order is neglected, but duplication of genes could have happened only on segments associated with particular genes on the species tree). We study two versions of this problem, one of which was solved recently by Bansal and Eulenstein. We provide min-max theorems for both versions that generalize Gallai's archetypal min-max theorem on intervals. These theorems lead to algorithms that find a feasible location for these episodes on the tree. (Received January 28, 2009)