1011-05-192   **Jonathan Cutler*** (`jcutler2@math.unl.edu`), 238 Avery Hall, University of Nebraska-Lincoln, Lincoln, NE 68588-0130. *On a Problem of Horak.*

We were able to prove a conjecture of Horak that can be thought of as an extension of classical results in graph theory, including Dirac's theorem on the existence of Hamiltonian cycles. Namely, we proved that for $1 \leq k \leq n-2$, if G is a connected graph with $A \subset V(G)$ such that $d_G(v) \geq k$ for all $v \in A$, then there exists a subtree T of G such that $V(T) \supset A$ and $d_T(v) \leq \lceil \frac{n-1}{k} \rceil$ for all $v \in A$. In this talk, we shall attempt to present the idea behind the proof when $k \leq \sqrt{n-1}$. (Received August 26, 2005)