

This work is solving the following problem: A graph G , a partial k -tree embeddable into some surface, is given. Is it possible to complete it to a k -tree in such a way that it is still embeddable? We show that this is always possible for small k (≤ 2) on any surface. On the contrary, for $k \geq 4$, one can find a partial k -tree that is not possible to complete in this way, and for k large enough, there is no partial k -tree that could be completed. The case $k = 3$ makes the border case, because there is an infinite list of complete 3-trees embeddable into any surface, but not every 3-tree is embeddable. It is known that every partial 3-tree can be completed in the plane. To keep the thesis self-contained we present here the so far unpublished proof of prof. Kratochvíl and prof. Thomas. We extend this result to the projective plane. Other surfaces are still unexplored.