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Given a connected finite graph  $\Gamma$  and a group of automorphisms  $G \leq \text{Aut}(\Gamma)$ , it is often desired to find a covering projection of graphs  $\wp: \tilde{\Gamma} \rightarrow \Gamma$  (with  $\tilde{\Gamma}$  finite, if possible) satisfying one or both of the conditions: (1)  $G$  is the largest group that lifts along  $\wp$ ; (2)  $\text{Aut}(\tilde{\Gamma})$  projects along  $\wp$ .

Even though the existence of such a covering projection seems to be a question about finite graphs, the problem can be translated into the language of totally disconnected locally compact groups acting on an infinite tree.

In my talk, I will present a recent result stating that under some mild assumptions on  $\Gamma$  and  $G$ , a covering projection  $\wp$  satisfying (1) always exists and that under some further restrictions (for example, if  $\Gamma$  is cubic and  $G$  is arc-transitive), the covering projection can be chosen in such a way that it satisfies (2) as well. (Received March 17, 2017)