Oriented trees of bounded width

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For a given finite oriented graph G, the decision problem $\text{HOM}(G)$ asks, given as its input a finite oriented graph H whether there exists a homomorphism from H to G. The Dichotomy Conjecture states that this problem, for a fixed G, is either in P or it is NP-hard. The Conjecture has been verified for several classes of oriented graphs. The problem $\text{HOM}(T)$, where T is a finite oriented tree has been studied in the papers of P. Hell, J. Nešetřil, and X. Zhu, among others. In this talk, we will focus on the investigation of finite oriented trees T which have the so-called finite treewidth duality.

This is a joint work with C. WANG.