Diameters of duals are linear

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Abstract

For every oriented tree T there exists a graph D_T (called the *dual* of T) such that $T \not\to G \Leftrightarrow G \to D_T$ holds for every G (an arrow denotes the existence of a homomorphism). An explicit construction of D_T has been found recently. Although the D_T constructed this way may have exponential number of vertices in $|V(T)| = n$, we will prove that its diameter is linear in n (and therefore D_T is "small" in some sense).