# Limit theory of pruning processes for Galton-Watson trees

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**Abstract**: Pruning processes $(\mathcal{F}(\theta), \theta \geq 0)$ have been studied separately for Galton-Watson trees and for Lévy trees. In this paper, we establish a limit theory that strongly connects the two studies, thereby solving an open problem by Abraham and Delmas, also formulated as a conjecture by Löhr, Voisin and Winter. Specifically, we show that for any sequence of Galton-Watson forests $(\mathcal{F}_n, n \geq 1)$ in the domain of attraction of a Lévy forest $\mathcal{F}$, suitably scaled pruning processes converge with respect to the Skorohod topology on cadlag functions with values in the space of (isometry classes of) locally compact real trees. We separately treat pruning at nodes and edges.