Global survival of tree-like branching random walks.

Cristian F. Coletti\textsuperscript{1}, Daniela Bertacchi\textsuperscript{2}, Fabio Zucca\textsuperscript{3}

\textsuperscript{1} Universidade Federal do ABC
\textsuperscript{2} Università degli studi di Milano-Bicocca
\textsuperscript{3} Politecnico di Milano

The reproduction speed of a continuous-time branching random walk is proportional to a positive parameter $\lambda$. There is a threshold for $\lambda$, which is called $\lambda_w$, that separates almost sure global extinction from global survival. Only for some classes of branching random walks it is known that the global critical parameter $\lambda_w$ is the inverse of a certain function of the reproduction rates, which we denote by $K_w$. We provide here new sufficient conditions which guarantee that the global critical parameter of tree-like branching random walks equals $1/K_w$. This result is part of a joint work with Bertacchi, D. and Zucca, F. (ALEA, v. 14, p. 381-402, 2017).