

Given a real-valued random variable C and a sequence (T_1, T_2, \dots) of non-negative random variables with $N := \sup\{j \geq 1 : T_j > 0\} < \infty$ almost surely, a probability distribution P on \mathbb{R} can be transformed into the distribution of $C + \sum_{j \geq 1} T_j X_j$, where X_1, X_2, \dots is a sequence of i.i.d. random variables independent of (C, T_1, T_2, \dots) and X_1 has distribution P . This transformation is called a smoothing transform. Fixed points of smoothing transforms frequently arise in applied probability, for instance, in the analysis of algorithms, in the theory of branching processes, and in interacting particle systems. The goal of the talk is to give an overview over recent developments in the study of the fixed points of smoothing transforms.