CATALYTIC DISCRETE STATE BRANCHING MODELS AND RELATED LIMIT THEOREMS

Chunhua MA Beijing Normal University, P. R. China, E-mail: chunhuam@gmail.com

Abstract: Catalytic discrete state branching processes with immigration are defined as strong solutions of stochastic integral equations. We provide main limit theorems of those processes using different scalings. The class of limit processes of the theorems includes essentially all continuous state catalytic branching processes and spectrally positive regular affine processes, respectively.