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Trees under attack: a genealogy in Feller's branching with logistic drift

Abstract :

For a population process in which, in addition to an independent branching of individuals, the total population size decreases at a rate proportional to its square, we construct by a suitable numbering of individuals a genealogy which in the continuum mass limit leads to an analogue of the subordinator representation for (independent) continuum mass branching. The exploration process of the individual offspring trees follows a dynamics whose continuum limit seems interesting in its own right and leads to an extension of the Ray-Knight theorem. This is joint work with Etienne Pardoux.