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Finiteness of the total occupation time for (α, β)-superprocess

Let X be the d-dimensional (α, β)-superprocess with Lebesgue initial measure, i.e., X is a superprocess with α-stable spatial movement and $(1 + \beta)$-stable branching. For $\alpha = 2$ (super Brownian motion) Iscoe proved that its total occupation time $\int_0^\infty X_t(B)\, dt$ is finite a.s. if and only if $d\beta < 2$, where B denotes the unit ball. He further conjectured that the similar result should hold for $\alpha < 2$ with $d\beta < 2$ replaced by $d\beta < \alpha$. In this talk we want to give a partial answer to Iscoe's conjecture.