

# Toward deciding whether a discretely observed process has jumps

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We observe a process at  $n$  times  $\Delta_n, 2\Delta_n, \dots, n\Delta_n$ , and wish to decide on this basis whether the process has jumps or not. In such a way, the problem is of course not really well posed, but we can define a number of "distances" between the observed process and the class of all processes with continuous paths, and then try to estimate this distance.

We give a variety of such – more or less reasonable – distances when the processes are Lévy, and we show how they can be estimated, with rates of convergence, in this particular case. We also explain which ones of these partial results can be expected to hold for larger classes of semimartingales, and which ones cannot.