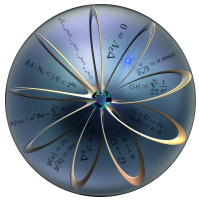

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càdlàg process

Canonical name	CadlagProcess
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Classification	msc 60G07
Synonym	cadlag process
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Synonym	R-process
Synonym	right-process
Related topic	UcpConvergenceOfProcesses
Defines	cadlag
Defines	rcll
Defines	R-process
Defines	right-process
Defines	càglàd
Defines	lcrl
Defines	L-process

A càdlàg process X is a stochastic process for which the paths $t \mapsto X_t$ are right-continuous with left limits everywhere, with probability one. The word *càdlàg* is an acronym from the French for "continu à droite, limites à gauche". Such processes are widely used in the theory of noncontinuous stochastic processes. For example, semimartingales are càdlàg, and continuous-time martingales and many types of Markov processes have càdlàg modifications.

Given a càdlàg process X_t with time index t ranging over the nonnegative real numbers, its left limits are often denoted by

$$X_{t-} = \lim_{\substack{s \to t, \\ s<t}} X_s$$

for every $t > 0$. Also, the jump at time t is written as

$$\Delta X_t = X_t - X_{t-}.$$

Alternative terms used to refer to a càdlàg process are *rcll* (right-continuous with left limits), *R-process* and *right-process*.

Although used less frequently, a process whose paths are almost surely left-continuous with right limits everywhere are known as *càglàd*, *lcrl* or *L-processes*.