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STOCHASTIC PROCESSES WITH LINEAR CONDITIONAL EXPECTATION AND QUADRATIC CONDITIONAL VARIANCE

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Abstract: Linear conditional expectations and quadratic conditional variances determine a class of stochastic processes with independent increments. Characterizations of the Wiener, Poisson, gamma, negative binomial and hyperbolic secant processes are obtained. Also a result on existence and determination of moments by the first two conditional moments for a sequence of random variables is proved.

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