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Erick Herbin* (erick.herbin@centralesupelec.fr), Erick Herbin, CentraleSupélec, Grande Voie des Vignes, 92295 Chatenay-Malabry, France. *Set-indexed processes and integration.*

We consider the issue of generalized stochastic processes, indexed by an abstract set of indices. What should the minimal required conditions on the indexing collection be, to study some of the usual properties of these processes, such as increment stationarity, martingale and Markov properties or integration question? The already known examples of processes indexed by functions or metric spaces can be addressed by this way.

We show how the set-indexed framework of Ivanoff-Merzbach allows to study these generalized processes.

Some set-indexed processes can be considered as random measures on some δ -ring. Some generalized processes can be defined as an integral with respect to some measure on the indexing collection. The example of set-indexed Lévy processes is considered. The links with function-indexed processes could be discussed.

If time permits, we could also discuss regularity issue : continuity or Hölder regularity.

This talk is based on three works in collaboration with Ely Merzbach and Alexandre Richard. (Received January 20, 2015)