

1067-60-890

Hui-Hsiung Kuo* (kuo@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803, **Anuwat Sae-Tang** (anuwat@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803, and **Benedykt Szozda** (benny@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *A stochastic integral for adapted and instantly independent stochastic processes.*

We study a new stochastic integral for stochastic processes which are generated by adapted and instantly independent stochastic processes. In the definition of the new stochastic integral, the crucial idea of forming Riemann-like sums is the evaluation points for the integrands, namely, the adapted factors are evaluated at the left endpoints of the subintervals, while the instantly independent factors are evaluated at the right endpoints of the subintervals. We will present some results on the existence of this new stochastic integral for an interesting class of stochastic processes. We will also introduce the concept of pre-martingale which is used in studying stochastic processes defined by this new stochastic integral. (Received September 16, 2010)