1046-60-1501 **Mark Burgin** (mburgin@math.ucla.edu) and **Alan Krinik*** (ackrinik@csupomona.edu), Alan Krinik, Department of Mathematics and Statistics, California State Polytechnic Univ., Pomona, Pomona, CA 91768. *Generalized Spaces of Random Variables.*

Let us assume that (S, F, P) is a probability space, A is an element of F and T is a cumulative partition of the real line and X is a real random variable. We define the expected hyper-value HMX over the event A as the hyper-integral of X over A [Burgin, M. Hyper-functionals and Generalized Distributions, in "Stochastic Processes and Functional Analysis", Dekker, 2004].

Theorem 1. The expected hyper-value HMX exists for any random variable X. At the same time, the expected value MX does not exist for all random variables X. In addition, the expected hyper-value allows one to discern random variables that have "different" types of infinite expected values. The following theorem gives one of the main properties of expected hyper-values.

Theorem 2. The expected hyper-value HMX coincides with the expected value MX if and only if HMX does depend on the partition T.

We study other properties of expected hyper-values. Many of these properties are similar to properties of expected values.

Theorem 3. The expected hyper-value HMX is a linear hyper- functional on the space of random variables and an additive hyper-functional on the space of probabilities. (Received September 15, 2008)