

1063-60-35

Mark Burgin and **A. C. Krinik**,*, Department of Mathematics and Statistics, California State Polytechnic University, 3801 W. Temple Ave., Pomona, CA 91768. *Conditional Hyperprobability*. Preliminary report.

Hyperprobability extends the concept of probability, allowing one to assign hyperprobability to events and processes that do not have probability, while preserving many properties of classical probability (Burgin, M. and Krinik, A.C. Probabilities and Hyperprobabilities, 8th Annual International Conference on Statistics, Mathematics and Related Fields, Honolulu, Hawaii, 2009, pp. 351-367). Here we define and study conditional hyperprobability. Many properties of conditional hyperprobability are similar to properties of conditional probability. In particular, Bayes Theorem for conditional hyperprobability is proved. This result allows essential extension of the Bayesian approach to statistics, inductive logic, and epistemology. At the same time, not all properties of conditional hyperprobability are similar to properties of conditional probability. (Received July 14, 2010)