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Mark Burgin and Dongxin (Tony) Chen* (tonypomona@yahoo.com), 3801 W. Temple Avenue, Department of Mathematics and Statistics, Pomona, CA 91768, and Alan Krinik. Extending the Radon-Nikodym Theorem to Hypermeasures. Preliminary report.

A simplified derivation of the classical Radon-Nikodym Theorem appeared in an interesting article written by Anton R. Schep in the American Mathematical Monthly, (Vol. 110, No. 6, June-July 2003, pp. 536-538). We use this approach to extend the Radon-Nikodym Theorem to the hypermeasure setting. The ideas of hypernumbers, hypermeasures and hyperintegration are briefly summarized. Standard real analysis results are re-visited and re-interpreted for hypermeasures in order to generalize Schep's derivation of the Radon-Nikodym Theorem. (Received September 15, 2009)