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Alberto M Tegui* (alberto@math.duke.edu), 728 glen hollow dr, durham, NC 27705, and
Arlie O. Petters and **Brian Rider**. *A Mathematical Theory of Stochastic Microlensing*.

Microlensing is the study of the deflection of light by compact objects and is used to probe the substructure of dark matter. In this talk, we shall present an analytical treatment of stochastic microlensing. In particular, we shall show how the distribution of the random compact objects' position and mass affect the distribution of two fundamental lensing observables: the number of minimum images and the magnification of a light source. This is a work in progress. (Received September 22, 2009)