1014-58-702 **Jean Steiner*** (steiner@cims.nyu.edu), Courant Institute of Mathematical Sciences, 251 Mercer St., New York, NY 10003. *Hide–and–Seek and a Geometric Spectral Invariant on Surfaces.*

On a compact surface, the Laplacian Operator is a linear operator with discrete eigenvalues, and one can define a (regularized) trace, which is a spectral invariant that contains geometrical information. We will give a probabilistic interpretation of the regularized trace on a surface in terms of a 'Hide–and–Seek' game played on the surface. With the probabilistic interpretation as a guide, we will motivate and describe a few examples that illustrate the behavior of the regularized trace. (Received September 22, 2005)