1154-60-439 **Michael Salins*** (msalins@bu.edu), 111 Cummington Mall, Department of Mathematics and Statistics, Boston, MA 02215. *Uniform large deviations principles.*

There are three definitions of uniform large deviations principles that are used extensively in the literature: Freidlin and Wentzell's uniform large deviations principle (FWULDP), Dembo and Zeitouni's uniform large deviations principle (DZULDP), and Dupuis and Ellis's uniform Laplace principle (ULP). These three definitions are equivalent when describing uniformity over compact sets of parameters (usually initial conditions for stochastically perturbed dynamical systems). In the context of exit time problems for stochastic partial differential equations, however, the assumption of compact sets of initial conditions is too restrictive because compact sets in infinite dimensional Banach spaces have no interior. I demonstrate that the FWULDP, DZULDP, and ULP are not equivalent in the absence of compactness and that of the three definitions, only Freidlin and Wentzell's definition is applicable for proving uniformity with respect to initial conditions in non-compact sets. I also introduce the notion of the equicontinuous uniform Laplace principle (EULP) and prove that it is equivalent to the FWULDP without any compactness assumptions. (Received September 04, 2019)