On Continuous Convergence and Epi-convergence of Random Functions. Part II: Sufficient conditions and applications.

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Abstract: Part II of the paper aims at providing conditions which may serve as a bridge between existing stability assertions and asymptotic results in probability theory and statistics. Special emphasis is put on functions that are expectations with respect to random probability measures. Discontinuous integrands are also taken into account. The results are illustrated applying them to functions that represent probabilities.