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James D. Kuelbs* (kuelbs@math.wisc.edu), Department of Mathematics, 480 Lincoln Drive, University of Wisconsin- Van Vleck Hall, Madison, WI 53706. *Some remarks on the CLT and the Compact LIL.*

The classical limit theorems for i.i.d. data, namely the law of large numbers, the central limit theorem (CLT), and the law of the iterated logarithm (LIL), have counterparts when the observations are random vectors in a separable Banach space, but only the law of large numbers has exactly the same form as in the finite dimensional setting. In particular, necessary conditions for both the CLT and the LIL include not only conditions on the distribution of the data, but also on the partial sums of the data. What we seek to do here, is to try to understand the CLT and the LIL in terms of the data itself. Of course, some new ingredient must be introduced, and what we add is to allow slight modifications of the data. In particular, we restrict our modifications to be continuous, and to be no larger than a fixed small number, or in some cases a fixed small proportion of the magnitude of the data itself. What we find is that these modifications allow both the CLT and the LIL in a surprisingly broad setting, often where neither theorem held without additional assumptions. (Received August 05, 2006)