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Henry P Towsner* (htowsner@math.upenn.edu). *Regularity Lemmas in the Limit.*

In a precise way, Szemerédi's regularity lemma is a quantitative version of the existence of the conditional expectation. Similarly, hypergraph regularity corresponds to the existence of a sequence of conditional expectations on a sequence of nested sigma algebras.

We will discuss the nature of the correspondence between finitary, quantitative statements like regularity and infinitary statements like the existence of conditional expectation. (Received September 16, 2018)