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The weak law of large numbers and the St. Petersburg game

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Abstract

The law of large numbers is (one of) the most fundamental results in probability theory. In this talk we discuss the *weak* law of large numbers when the mean is infinite (and, hence, no strong law holds), and present a generalization which is well suited for the St. Petersburg game.

As alreday hinted at, there is no strong law. Moreover, convergence in distrribution fails. However, a result, due to Martin-Löf, tells us that one has convergence in distribution along the geometric subsequence 2^n to an infinitely divisible, semistable law.

We finally mention some joint work with Anders-Martin Löf concerning
- trimmed St. Petersburg games and
- an extension to unfair coins with a more general payoff.

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