WLLN, the St Petersburg game, CLT and Gnedenko-Raikov's theorem

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ABSTRACT

In the first part of the talk we present an extension of the Kolmogorov-Feller weak law of large numbers for sums of i.i.d. random variables without finite mean, requiring instead regularly varying normalizing sequences. The weak law for the St Petersburg game is an immediate consequence of this result.
In the second part we illustrate how WLLN and CLT for the regularly varying case can be joined in order to reprove a theorem due to Gnedenko.

References

[1] Gut, A. (2004). An extension of the Kolmogorov-Feller WLLN with an application to the St Petersburg game. *J. Theoret. Probab.* **17**, 769-779.
[2] Gut, A. (2006). Gnedenko-Raikov's theorem, CLT and the WLLN. *Stat. Probab. Lett.* **76**, 1935-1939.