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STRONG LIMIT THEOREMS FOR GENERAL RENEWAL PROCESSES

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Abstract: An approach is discussed to derive strong limit theorems for general renewal processes from the corresponding asymptotics of the underlying renewal sequence. Neither independence nor stationarity of increments is required. In certain situations, just the dualities between the renewal processes and their defining sequences in combination with some regularity conditions on the normalizing constants are sufficient for the proofs. There are other cases, however, in which the duality arguments do not apply, and where other techniques have to be developed. Finally, there are also examples, in which an inversion of the limit theorems under consideration cannot work at all.

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