

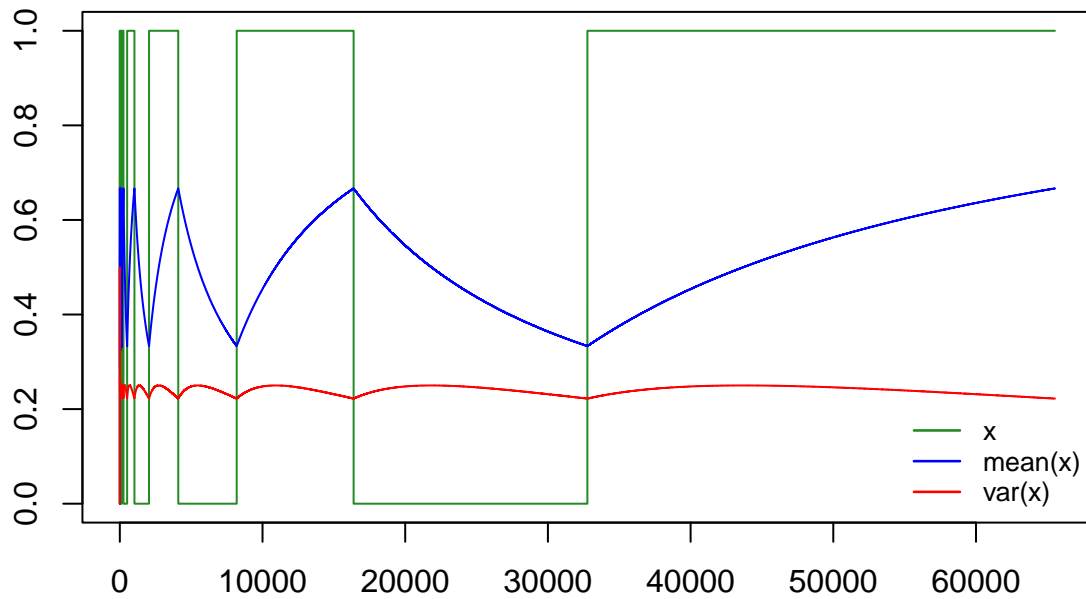
Process x

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A process with finite variance but non-converging mean

1. Initialize as $x=0$, $y=0$ and $i=1$
2. If $y=1$, set $y=0$, $y=1$ otherwise
3. Assign 2^i times the value y to x
4. Set $i = i + 1$
5. Repeat steps 2-4 indefinitely



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Same with a continuous function

$$y = \sin(\log(x^k))$$

where $k = 5$ only compresses the waves for visualization. The grey lines illustrate the infimum and supremum for the mean of y , which remain constant for all cutoffs of x .

