

Random walks are completely determined by their trace on the positive half-line.

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I will prove a result conjectured by Loïc Chaumont and Ron Doney, and stated in the title of this talk: if X_n is a one-dimensional random walk and $X_1 > 0$ with positive probability, then the distribution of X_1 is determined by distributions of $\max(X_n, 0)$. In other words, one can recover the negative part of the distribution of X_1 only by looking at positive parts of distributions of X_n . Equivalently, the law of X_n is described by the bi-variate ascending ladder process, or the bi-variate Wiener–Hopf factor.