Volumic large deviations in first passage percolation

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In standard first passage percolation with a bounded distribution, the probability of the passage time between 0 and ne_1 being abnormally large, let's say larger than $n(\mu(e_1) + \varepsilon)$, is bounded above by $\exp\left(-cn^d\right)$ with $c = c(\varepsilon)$ (Kesten, 1984). Moreover, under some regularity assumptions, Basu, Ganguly and Sly (2021) proved that this probability is actually well approximated by $\exp\left(-cn^d\right)$. We will present a generalization of their result which gives an estimate of the probability of a wider variety of nontypical events. Our proof's general sketch is inspired by the work of Dembin and Théret (2021+) on maximal flows. Work under the supervision of Jean-Baptiste Gouéré and Marie Théret.