

# CLT FOR THE CAPACITY OF THE RANGE OF STABLE RANDOM WALKS

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Let  $S$  be a random walk on the integer lattice with increments which belong to the domain of attraction of a stable law of index  $\alpha$ . Let  $\mathcal{R}_n = \{S_0, \dots, S_n\}$  be the range of  $S$  up to time  $n$ .

Our main result is the central limit theorem for the capacity  $\text{Cap}(\mathcal{R}_n)$  of the range  $\mathcal{R}_n$ . More precisely, we show that for  $d \geq 3\alpha$ ,

$$\frac{\text{Cap}(\mathcal{R}_n) - \mathbb{E}[\text{Cap}(\mathcal{R}_n)]}{\sqrt{n}} \rightarrow cN(0, 1) \quad \text{in law,}$$

where  $c$  is a positive constant and  $N(0, 1)$  is the standard normal distribution.