$K^{(\tex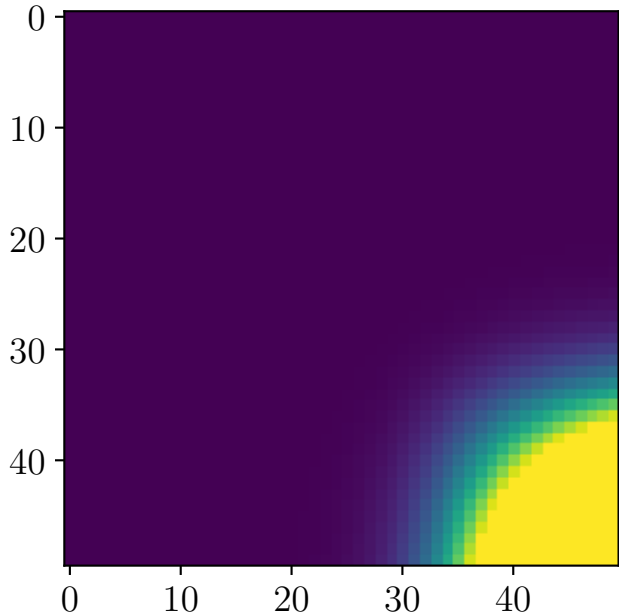t{out})}$ recursion $\qquad$ $K^{(\text{out})}$ empirical