

K=110, S(0)=100, T=1, r=0.05,  $\sigma = 0.25$ ,  $\lambda = 2$ , rebate R=1, the Stock price has lognormal jump distribution with  $\tilde{\mu} = 0$  and  $\tilde{\sigma} = 0.1$ . For the algorithm we propose the number of grid points in  $x$  is chosen as  $2^6$  and  $\Delta t = \Delta x$ . Below we use the acronyms LU or SOR to tell wheher we use the LU factorization or the SOR to solve for the sparse linear systems at each time step.

Barrier H	MA Price <sup>a</sup>	Proposed Algorithm			
		Value	Error	LU Time	SOR Time
85	9.013	8.988	-0.025	0.52	0.71
95	5.303	5.290	-0.013	0.64	0.86

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<sup>a</sup>The MA price comes from