Correlated noise in cold-atom quantum simulation SCOTT TAY-
LOR, CHRIS HOOLEY, Univ of St Andrews — We point out that, when a Hubbard
model is simulated by an optical-lattice system with noise in the laser controller,
there is generically a correlation between the fluctuations of the hopping amplitude,
J, and those of the on-site repulsion, U. We analyse a toy model of such correlated
noise. We also show, in a more realistic model, that such correlations lead to a
non-trivial ramp-time-independent value of the fidelity in the case of strong noise.

Scott Taylor
Univ of St Andrews

Date submitted: 11 Nov 2016