

Abstract Submitted  
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**Correlations after a quantum quench in the Bose Hubbard model<sup>1</sup>**

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Recent experimental advances that allow for the atomic resolution of dynamics for cold atoms in optical lattices call for theory to describe these dynamics. We use the Schwinger-Keldysh technique to study time and space dependent correlations after a quantum quench in the Bose Hubbard model. We focus on the case of time dependent hopping and use a real-time action that allows for the description of both the superfluid and Mott insulating phases to obtain dynamical equations for these correlations. We relate our results to recent experiments.

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