

Abstract Submitted  
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**Spatio-temporal correlations in the Bose Hubbard model after a quantum quench**<sup>1</sup> MATTHEW FITZPATRICK, MALCOLM KENNETT, Simon Fraser University — The dynamics of the Bose Hubbard model after a quantum quench have attracted much recent attention. Theoretically, it has proven challenging to describe spatio-temporal correlations in dimensions higher than one. We use the Schwinger-Keldysh technique and a strong coupling expansion to develop a two particle irreducible formalism that allows the study of correlations in time and space in both superfluid and Mott insulating regimes after a quantum quench. We obtain equations of motion for two-time correlation functions and relate our results to recent cold-atom experiments.

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