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Amplitude Effects in Lattice Modulation Spectroscopy ANDREAS DIRKS, KARLIS MIKELSONS, JIM FREERICKS, Georgetown University, H.R. KRISHNAMURTHY, Indian Institute of Sciences — Linear-response calculations for a periodically modulated optical lattice depth within the Mott-insulating phase of the Hubbard model clearly predict a resonance in the doublon production rate at the Hubbard repulsion U. Using a recently developed strong-coupling approach, we examine the effect of an increasingly high amplitude of the modulation. We find that multi-quanta excitations are likely to occur beyond a certain threshold.

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