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Vita O Borovyk*, Department of Mathematical Sciences, University of Cincinnati, Cincinnati, OH 45221, and **Michael Goldberg**. *Dispersive Estimates in Harmonic Lattice Systems in dimension 2*.

We consider infinite-volume quantum harmonic lattice systems and study the decay of the commutator norms in the large-time regime. Specifically, we look at the commutator of two finitely-supported observables that are moving apart with a fixed velocity and determine the precise dependence of the decay rate of the commutator norm on the velocity. It turns out that separation velocities can be naturally divided into four classes, according to the type of decay they produce. The minimal dispersion rate is of order $|t|^{-3/4}$, and the corresponding class consists of a unique (up to mirror symmetries) velocity. (Received September 11, 2012)