1073-42-87 **Vita Borovyk** and **Michael Goldberg***, University of Cincinnati, Department of Mathematical Sciences, Old Chem Hall, Cincinnati, OH 45221-0025. *Wave Propagation on Square Lattices.* Preliminary report.

We study dispersive estimates for the wave equation on a square lattice with non-isotropic coupling between nodes. The fundamental solution is found by evaluating oscillatory integrals which may possess stationary phase points of various degenerate types. The degree and type of degeneracy in turn determines the power-law for dispersion at the selected points. For the two-dimensional lattice, the resulting propagator has maximum amplitude $|t|^{-3/4}$, moving along rays with a velocity $\mathbf{v}_0$ that is unique up to mirror symmetry. (Received July 27, 2011)