1172-42-219 **D Maldague*** (dmal@mit.edu), **L Guth** and **Y Fu**. *A new approach to small cap decoupling for the parabola.* Preliminary report.

Strichartz estimates for solutions to the periodic Schrodinger equation are a direct corollary of the (l^2, L^p) decoupling theorem of Bourgain and Demeter. In the setting for small cap decoupling (see the paper of Demeter, Guth, Wang), we continue to measure the L^p norm of solutions to the periodic Schrodinger equation (as well as more general functions) but over a spatial scale which does not see the full periodicity of the solutions. By further developing the approach used by Guth, Maldague, and Wang to re-prove decoupling for the parabola, we obtain sharp level set estimates for the size of the solutions on these smaller spatial domains. The level set estimates refine and recover the results of Demeter, Guth, Wang for the parabola, and lead to new (l^q, L^p) small cap decoupling inequalities. This work is in collaboration with Yuqiu Fu and Larry Guth. (Received August 29, 2021)