

# STABILITY ESTIMATES FOR THE COEFFICIENTS OF THE MAGNETIC SCHRÖDINGER EQUATION

LEO TZOU, UNIVERSITY OF WASHINGTON

Abstract: In this talk we discuss a loglog-type estimate which shows that in dimension three or higher the magnetic field and the electric potential of the magnetic Schrodinger equation depends stably on the Dirichlet to Neumann (DN) map even when the boundary measurement is taken only on a subset that is slightly larger than half of the boundary. Furthermore, we prove that in the case when the measurement is taken on all of the boundary one can establish a better estimate that is of log-type. The proofs involve the use of the complex geometric optics (CGO) solutions of the magnetic Schrodinger equation constructed by G. Nakamura, Z. Sun, and G. Uhlmann. We then use these solutions as in G. Alessandrini to establish the desired stability estimate. In the partial data estimate we follow the general strategy of H. Heck and J. Wang by using a Carleman-type estimate applied to a continuous dependence result for analytic continuation developed by G. Vessella.

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON  
*E-mail address:* `l1eo@math.washington.edu`