Candidate Colloquium

William Green

Rose-Hulman Institute of Technology

Wednesday, January 23rd
Room 6132, Edwards Center 1
4:00 – 5:00 pm

Dispersive estimates for the Dirac Equation

The Dirac equation is a hyberbolic system of partial differential equations, which was derived by Dirac in 1928 to model the behavior of subatomic particles moving at relativistic speeds. The Dirac equation is considerably less well studied than other dispersive equations such as the Schrödinger, wave or Klein-Gordon equations. We will survey recent work on time-decay estimates for the solution operator. The existence of threshold eigenvalues and resonances affects the dynamics of the solution. We classify the threshold eigenvalue and resonance structure in two and three spatial dimensions and study their effect on the time decay. The talk will be based on joint works with B. Erdogan (Illinois), M. Goldberg (Cincinnati) and E. Toprak (Rutgers).

Refreshments will be served 3:15 – 3:45 pm in the Faculty & Graduate Student Lounge Room 4118 French Hall West

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