DECAY FOR THE MAXWELL FIELD OUTSIDE A KERR BLACK HOLE

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In this talk, I will discuss current work on the study of the Maxwell field outside a very slowly rotating Kerr black hole. The goal is to prove uniform energy bounds and Morawetz (integrated decay) estimates. Similar problems for the wave equation outside a slowly rotating Kerr black hole and for the Maxwell field outside a Schwarzschild black hole have already been solved. (Another talk in this session will discuss very nice results about the Einstein equation and the Schwarzschild spacetime.) Early work on those problems used pseudodifferential techniques, but later work was able to avoid this. We have previously outlined a strategy for approaching the Maxwell problem using pseudodifferential methods. This talk will outline that strategy and discuss the prospect of finding a strategy that only uses classical derivatives.

This is joint work with L. Andersson and J.-P. Nicolas.