



Applied and Computational Mathematics Seminar

Title: The Reeh-Schlieder property in curved spacetimes

Speaker: Jacobus Sanders (University of York)

Date: Thu 7th February 2008 at 2:15PM

Location: Mathematical Sciences Seminar Room

Abstract: In 1961 Reeh and Schlieder proved that the vacuum state of a Wightman field in Minkowski spacetime has many non-local correlations: by performing operations only in an arbitrarily prescribed open region of spacetime one can approximate every state in Hilbert space with arbitrary accuracy. The proof uses the analyticity of the Minkowski metric, so it is not clear whether this result also holds on smooth curved spacetimes. I will discuss several known results in this direction and describe an attempt to generalise these results further to arbitrary smooth globally hyperbolic spacetimes. It uses a spacetime deformation argument a la Fulling, Narcowich and Wald. This argument will be formulated in the language of locally covariant QFT, an axiomatic/algebraic formulation of QFT in curved spacetime (due to Brunetti, Fredenhagen and Verch) which will be explained.

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