Contribution Title:	ON THE UNIQUENESS OF STATIONARY BLACK HO-LES IN VACUUM
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Invited speaker:	Topical session
YRS seminar:	NO

It is widely expected that the domain of outer communication of a four-dimensional regular, stationary, black hole solution of the Einstein vacuum equations has to be isometric to the domain of outer communication of a Kerr black hole. So far the conjecture is known to be true in the case of real-analytic spacetimes, with suitable regularity assumptions, through the work of Hawking, Carter, and Robinson.

I will discuss some recent work aimed at removing the real-analyticity assumption: a uniqueness theorem for regular spacetimes that satisfy a suitable identity on the two-dimensional bifurcation sphere, and a uniqueness theorem for regular spacetimes that are assumed to be "close" to some Kerr spacetime.