1096-35-1590 **Mihalis Dafermos*** (m.dafermos@dpmms.cam.ac.uk), Department of Mathematics, Fine Hall, Washington Road, Princeton, NJ, and **Gustav Holzegel** and **Igor Rodnianski**. *A scattering theory construction of dynamical vacuum black hole spacetimes.*

This talk will outline a construction of dynamical vacuum black hole spacetimes in general relativity. These spacetimes settle down asymptotically to a member of the Kerr family, and are parameterised by scattering data encoding gravitational radiation radiated to infinity, or to the black hole. These spacetimes constitute the first known examples of vacuum metrics exhibiting this behaviour. (Received September 16, 2013)