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On falling into black holes

The celebrated "black hole" spacetimes of Schwarzschild and Kerr play a central role in our current understanding of Einstein's general theory of relativity. Are these spacetimes stable, however, as solutions to the Einstein vacuum equations, in their exterior region? And what fate awaits physical observers who enter inside a "generic" black hole? It turns out that these two questions are intimately related and the answer to the second may be more disturbing than previously thought. This talk will try to explain how so.