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The build-up of galactic centers - how do black holes get there?

Abstract

The centers of massive galaxies are special in many ways, not least because all of them are believed to host supermassive black holes. Since the discovery of a number of relations linking the mass of this central black hole to the large scale properties of the surrounding galaxy bulge it has been suspected that the growth of the central black hole is intimately connected to the evolution of its host galaxy. However, at lower masses, and especially for bulgeless galaxies, the situation is much less clear. Interestingly, these galaxies often host massive star clusters at their centers, and unlike black holes, these nuclear star clusters provide a visible record of the accretion of stars and gas into the nucleus.

I will present our ongoing observing programme of the nearest nuclear star clusters, including the one in our Milky Way. These observations provide important information on the formation mechanism of nuclear star clusters. They allow us to measure potential black hole masses and might give a clue on how black holes get to the centres of galaxies.