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The evolution of BH mass - host galaxy relation with AO images.

The discovery of a relationship between the central black hole and the properties of their host galaxies is a fundamental ingredient for a comprehensive interpretation of the structure and evolution of the galaxies. Of particular relevance is the understanding of how this relationship evolves over the cosmic time as it can offer important clues for the study of the formation processes of galaxies and their central massive BHs. In order to explore this link, it is needed to measure both the mass of the central BH and the properties of its host galaxy over a significant cosmic time. This can be done using spectroscopy of quasars to derive BH masses and high resolution images to characterise their host galaxies. Here we present detailed simulations to evaluate the accuracy of future observations obtained with new generation near-IR AO imaging cameras on Extremely Large Telescopes.

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