

## Frequency of active galactic nuclei in isolated galaxies compared to clusters and compact groups

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### Abstract

We present a study of the effects of environment and interactions on nuclear activity focussing on both radio and optical types of active galactic nuclei (AGN). We compare the frequency of occurrence of AGN in samples of galaxies: 1) in dense environments (clusters) or 2) affected by short-range interactions (compact groups) with 3) the AMIGA sample of isolated galaxies (Analysis of interstellar Medium of Isolated GALaxies; <http://amiga.iaa.es/>). The latter sample minimizes external effects experienced by samples 1) and 2) allowing us to infer the role of intrinsic processes. Account was taken of possible biases caused by the morphology-density and luminosity-density relations. Our study shows that radio nuclear activity is strongly influenced by environment while such an influence is not clear for optical nuclear activity. Further insight into this topic could be obtained by considering separately the effects of large scale environment and those due to one-on-one interactions. A careful study that makes use of a sample of  $\sim 300,000$  Sloan Digital Sky Survey galaxies, and takes into account these differences, is presented in a companion talk.