

## Probing environmental quenching in the Fornax cluster through a population-orbital superposition method

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We probe the effect of cluster environment to the star formation quenching in galactic thin disks for 18 galaxies (17 early-type, 1 late-type) in the Fornax cluster. High quality data resolving the kinematical and chemical information across the observational plane are obtained through IFU observations with MUSE/VLT. We create population-orbit superposition models to each galaxy, the model fit the surface brightness, kinematics, age and metallicity maps simultaneously. Based on the model, we can dynamically separate the thin disk from other component of the galaxy and obtain its age distributions across the disk plane. We find 9 of the 18 galaxies show positive age gradient on the cold disk. With the help of our model and infall time classification based on the cluster phase-space, we find recent infallers are mostly with higher cold disk fraction, younger cold disk and positive age gradient while ancient infallers have older and smaller disks which show negative age gradient. By comparing with simulation, we find that positive age gradient is strong evidence of environmental quenching.

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