

## [ㄹGC-15] Testing Gravitational Weak-lensing Maps with Galaxy Redshift Surveys

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A gravitational weak-lensing map provides a weighted "picture" of the projected surface mass density and is to be an important tool for identifying "mass-selected" clusters of galaxies. However, weak-lensing maps have a limitation due to the projection of large-scale structure along the line-of-sight. Geller et al. (2010) and Kurtz et al. (2012) compared massive clusters identified in a dense redshift survey with significant weak-lensing map convergence peaks. Both assessments of the efficiency of weak-lensing map for cluster identification did not draw a general conclusion, because the sample is so small. Thus, we additionally perform deep imaging observations of fields in a dense galaxy redshift survey that contain galaxy clusters at  $z \sim 0.2-0.5$ , using CFHT Megacam. Our study will provide an important opportunity to examine the efficiency and completeness of a weak-lensing selection, and further to improve the method of cluster identification in future weak-lensing surveys.

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## [ㄹGC-16] Progress Report on Optical Spectroscopy of X-ray selected Intermediate-mass Black Holes

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We present high-resolution optical spectra of newly selected candidates of intermediate-mass black holes. The sample was selected based on the variability and spectral shape in X-ray. The spectra was taken with Magellan 6.5 m Clay

Telescope and cover the rest-frame region 3500-10000Å. The high spectral resolution ( $R \sim 4000$ ) of the spectrum allows us to estimate BH masses of the sources. Interestingly, the majority of the sample appears to have broad

emission lines. Using this dataset, we will estimate the BH masses and Eddington ratio in order to understand their physical properties.