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**[ㄷGC-38] A Pilot Study for CO of BUDHIES Galaxies**Aeree Chung<sup>1</sup><sup>1</sup> *Department of Astronomy, Yonsei University*

The fraction of blue galaxies in clusters is found to dramatically increase with redshift. This trend has been known as the Butcher-Oemler (B-O) effect which implies a significant evolution among the cluster galaxy population with time. It has been proposed that the blue galaxies in B-O clusters are at their last stage of star formation, probably using up the gas, which then might have evolved into red and passive cluster galaxies as found in the Local Universe. To test this hypothesis and ultimately to understand the evolution of cluster galaxy population as a function of redshift, we have embarked a multi-wavelength study of two carefully selected galaxy clusters at  $z \sim 0.2$  where the B-O effect becomes first noticeable. In this talk, I will introduce the Blind Ultra-deep Distant HI Environmental Survey (BUDHIES) on those two clusters and relevant multi-wavelength observations. Also, I will present the preliminary results of our recent Nobeyama CO observations of two galaxies selected among the BUDHIES sample.

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**[ㄷGC-39] Neutral Hydrogen Absorption in Three Virgo Galaxies**Aeree Chung<sup>1</sup>, Jae-Joon Lee<sup>2</sup><sup>1</sup>*Yonsei University*, <sup>2</sup>*KASI*

The HI absorption against bright continuum source provides a unique opportunity to measure spin temperature of the neutral hydrogen gas. We find three cases among the sample of the VIVA (VLA Imaging of Virgo galaxies in Atomic gas) study with self absorption of strong central continuum by galactic HI gas. Using the HI flux ratio of emission and absorption, we constrain the spin temperature of the neutral hydrogen gas on their disk. The HI absorption is marginally resolved in these galaxies, which also allows us to probe the kinematics of the absorbing gas. All three galaxies are severely stripped in HI due to the intra cluster medium (ICM). We discuss the influence of environmental processes on the temperature and kinematics of HI in these galaxies.