Z127a AGN sciences with PFS-SSP galaxy evolution survey

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Understanding when and how supermassive black holes (SMBHs) have formed and evolved in the history of the universe is one of the most critical issues in astronomy. To tackle this issue, it is essential to examine active galactic nuclei (AGN) in various evolutionary stages in all epochs without any selection bias and to reveal their physical and statistical properties by comparing them with theoretical models. From an observational point of view, a complete sample of AGN selected with multi-wavelength data is required. The PFS Subaru Strategic Program (PFS-SSP) will provide a unique opportunity to establish such a sample and achieve the above science goal. Toward the PFS-SSP galaxy evolution survey, we, the AGN sub-working group (WG), have launched 7 AGN projects covering (1) broad-line AGN, (2) X-ray AGN, (3) infrared AGN, (4) submillimeter AGN, (5) radio AGN, (6) variability AGN, and (7) narrow-band selected AGN. We have selected AGN targets from the HSC deep fields (i.e., COSMOS, XMM-LSS, DEEP2-3, and ELAIS-N1) based on color, magnitude, and/or photometric redshift cuts. According to the simulated PFS spectra, the proposed targets are expected to detect continuum/lines with moderately high SN given a 2-hour exposure time. In this talk, we present the current status of AGN sciences with PFS-SSP, such as the number of targets and possible science cases.