Exploring the AGN Population with PFS-SSP: Survey Status and Early Results

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The Prime Focus Spectrograph (PFS) is a multi-fiber spectrograph installed at the prime focus of the Subaru Telescope, enabling simultaneous observations of 2,400 spectra over a wavelength range of 0.38–1.26 μm. The PFS Subaru Strategic Program (PFS-SSP), which started in March 2025, is one of the largest spectroscopic surveys conducted with an 8-m class telescope, with 360 nights allocated over five years. PFS-SSP aims to obtain spectra for more than four million galaxies over an area exceeding 1,200 square degrees, providing an unprecedented dataset to investigate the physical and statistical properties of active galactic nuclei (AGN) and galaxies across cosmic time, including faint populations beyond the reach of typical 2–4 m-class telescopes. The PFS-AGN Working Group constructed an AGN target catalog based on the Hyper Suprime-Cam SSP data using multiple selection techniques, including broadband colors, multi-wavelength information, narrowband excesses, optical/IR variability, and gravitational lensing. In this poster, we present the current status of PFS-AGN observations and initial results from the first phase of PFS-SSP observations, including approximately 1,500 AGN candidates observed to date. We highlight representative AGN spectra, assess the data quality, and introduce early data products. We also discuss the implications of these early observations for future AGN science with PFS-SSP.