Detection rates of serendipitous faint submillimeter galaxies

submillimeter galaxies (SMGs) are dusty galaxies with high star formation rates, they provide key information of the process of galaxy assembly and the cosmic star-formation history. Some SMGs may harbour an active galactic nucleus, which can only be detected by hard X-rays. Based on recent ALMA observations and numerical simulations, the project will investigate the possible scenarios of SMG evolution by estimating the number counts of faint (or background) SMGs, including embedded dusty QSOs, toward selected sources. Furthermore, the result can be applied to the detection rates of dusty QSOs with ALMA and future hard X-ray telescopes. Candidates are expected to have taken a course in fundamental astronomy, and be experienced with programming. knowledge of Python is a plus.