X06a JWST observations of ALMA [O III] 88 μm emitters in the epoch of reionization

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Understanding properties of galaxies in the epoch of reionization (EoR) is a frontier of modern astronomy. With ALMA, it has become possible to detect far-infrared fine structure lines (e.g., [C II] 158 μm and [O III] 88 μm) and dust continuum emission in star-forming galaxies in the EoR. ALMA observations have revealed that i) some [O III] 88 μm emitters have matured stellar populations at $z > 6$, implying early star formation activity at $z > 10$, and that ii) high-z star-forming galaxies typically have very high [O III] 88 μm-to-[C II] 158 μm luminosity ratios ranging from 3 to 12 or higher, indicating interstellar media of high-z galaxies could be highly ionized. In this talk, we will discuss initial results of a medium-sized JWST GO1 program that targets a sample of 12 $z \sim 6-8$ ALMA [O III] 88 μm emitters with NIRCam and NIRSPec IFU modes (PIs: J. Alvarez-Marquez and T. Hashimoto). Our JWST GO1 program, in conjunction with ALMA data, will characterize the stellar, nebular, and dust properties of these [O III] 88 μm emitters and explore the contribution of this galaxy population to cosmic reionization.