

Contents

1	Introduction	1
2	ALMA Observations and Data Analysis	5
2.1	Sample and Campaign Background	5
2.2	ALMA Observations	6
2.2.1	Data Reduction	6
2.2.2	Source Detection	8
2.3	Companions at High Redshift	11
3	Line and Dust Emission properties	13
3.1	Emission Line Velocity Offsets	13
3.2	[CII] Line Spectrum and Host Velocity	15
3.2.1	Optical Center Separation	23
3.3	SEDs and SFRs	23
3.4	The L_{AGN} versus L_{SF} plane	25
4	Dynamical and Dust Masses	30
4.1	Dynamical Masses	30
4.2	Dust masses	31
4.3	Gas Masses	32
4.4	The Main Sequence at $z \sim 5$	32
5	Growth of SMBHs and Galaxies Through Mergers	37
5.1	SMBH–Host Galaxy Mass Relation	37
5.2	Major mergers among hosts	38
6	Conclusion	41
	Bibliography	43