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Title	VizieR Online Data Catalog: X-ray_peak-BCG offset for PSZ1 clusters (Rossetti+, 2016)
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J/MNRAS/457/4515 X-ray_peak-BCG offset for PSZ1 clusters (Rossetti+, 2016)

Measuring the dynamical state of Planck SZ-selected clusters:

X-ray peak - BCG offset.

Rossetti M., Gastaldello F., Ferioli G., Bersanelli M., De Grandi S.,
 Eckert D., Ghizzardi S., Maino D., Molendi S.
 <Mon. Not. R. Astron. Soc., 457, 4515-4524 (2016)>
 =[2016MNRAS.457.4515R](#) (SIMBAD/NED BibCode)

ADC_Keywords: Clusters, galaxy ; X-ray sources**Keywords:** galaxies: clusters: general - galaxies: clusters: intracluster medium**Abstract:**

We want to characterize the dynamical state of galaxy clusters detected with the Sunyaev-Zeldovich (SZ) effect by Planck and compare them with the dynamical state of clusters selected in X-rays survey. We analysed a representative subsample of the Planck SZ catalogue, containing the 132 clusters with the highest signal to noise ratio and characterize their dynamical state using as an indicator the projected offset between the peak of the X-ray emission and the position of the Brightest cluster galaxy. We compare the distribution of this indicator for the Planck SZ-selected sample and three X-ray-selected samples (HIFLUGCS, MACS and REXCESS). The distributions are significantly different and the fraction of relaxed objects is smaller in the Planck sample (52±4 per cent) than in X-ray samples (~74 per cent) We interpret this result as an indication of different selection effects affecting X-rays (e.g. 'cool core bias') and SZ surveys of galaxy clusters.

Description:

The starting point of our analysis is the Planck cosmology sample (PSZ1-cosmo) described in Planck Collaboration XX ([2014A&A...571A..20P](#)).

It is a high-purity subsample constructed from the first release of the Planck catalogue of SZ sources (Planck Collaboration XXIX, [2014A&A...571A..29P](#), Cat. [VIII/91](#)), by imposing a signal-to-noise ratio (S/N) threshold of 7 and applying a mask, that excludes the galactic plane and point sources leaving 65 per cent of the sky for the survey. It contains 189 bona fide clusters with associated redshifts and has been used for the cosmological analysis with cluster number counts described in Planck Collaboration XX ([2014A&A...571A..20P](#)).

File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
table1.dat	128	132	Properties of the clusters in our sample
refs.dat	76	28	References

See also:

[VIII/91](#) : Planck Catalog of Compact Sources Release 1 (Planck, 2013)
[J/A+A/581/A14](#) : Updated Planck catalogue PSZ1 (Planck+, 2015)

Byte-by-byte Description of file: [table1.dat](#)

Bytes	Format	Units	Label	Explanations
1- 4	I4	---	Index	Index in the PSZ1 catalogue
6- 9	A4	---	---	[PSZ1]
11- 23	A13	---	PSZ1	PSZ1 designation (GLLL.ll+BB.bb)
25- 41	A17	---	AName	Alternative name
43- 48	F6.4	---	z	Redshift of the cluster
50- 57	F8.4	deg	RAdeg	X-ray peak right ascension (J2000)
59- 66	F8.4	deg	DEdeg	X-ray peak declination (J2000)
68- 75	F8.4	deg	RABdeg	BCG right ascension (J2000)
78- 85	F8.4	deg	DEBdeg	BCG peak declination (J2000)
88-100	A13	---	Ref	Reference we used to associate a BCG to each cluster, in refs.dat file
102-106	F5.2	arcmin	theta500	Angular scale corresponding to R ₅₀₀
108-114	F7.2	arcsec	DX-BCGa	Distance between X-ray peak and BCG in arcsec
116-122	F7.2	kpc	DX-BCGk	Distance between X-ray peak and BCG in kpc
123-128	F6.2	---	DX-BCGR	Distance between X-ray peak and BCG in 0.01R ₅₀₀ unit

Byte-by-byte Description of file: [refs.dat](#)

Bytes	Format	Units	Label	Explanations
1- 13	A13	---	Ref	Reference code

13/5/2020J/MNRAS/457/4515

15-	33	A19	---	BibCode	BibCode
35-	51	A17	---	Aut	Author's name
56-	76	A21	---	Com	Comments

History:
From electronic version of the journal

(End) Patricia Vannier [CDS] 24-Nov-2016

The document above follows the rules of the [Standard Description for Astronomical Catalogues](#): from this documentation it is possible to generate *f77* program to load files [into arrays](#) or [line by line](#)