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Title	VizieR Online Data Catalog: Evolution of galaxy clusters metal abundance (Ettori+, 2015)
Authors	ETTORI, STEFANO, Baldi, A., Balestra, I., GASTALDELLO, FABIO, MOLENDI, SILVANO, TOZZI, Paolo
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J/A+A/578/A46 Evolution of galaxy clusters metal abundance (Ettori+, 2015)

The evolution of the spatially-resolved metal abundance in galaxy clusters up to $z=1.4$.
Ettori S., Baldi A., Balestra I., Gastaldello F., Molendi S., Tozzi P.
<Astron. Astrophys. 578, A46 (2015)>
[=2015A&A...578A..46E](#)

ADC_Keywords: Clusters, galaxy ; Redshifts ; Abundances

Keywords: galaxies: clusters: intracluster medium - X-rays: galaxies: clusters

Abstract:
We present the combined analysis of the metal content of 83 objects in the redshift range 0.09-1.39, and spatially-resolved in the 3 bins (0-0.15, 0.15-0.4, >0.4) R_{500} , as obtained with similar analysis using XMM-Newton data in Leccardi & Molendi ([2008A&A...487..461L](#)) and Baldi et al. ([2012A&A...537A.142B](#)).

By combining these two large datasets, we investigate the relations between abundance, temperature, radial position and redshift holding in the Intra-Cluster Medium.

We fit functional forms to the combination of the different physical quantities of interest, i.e. ICM metal abundance, radius, and redshift. We use the pseudo-entropy ratio to separate the Cool-Core (CC) cluster population, where the central gas density tends to be relatively higher, cooler and more metal rich, from the Non-Cool-Core systems.

Description:
The full dataset is available at <http://pico.bo.astro.it/settori/abun/xmm.dat> and will be updated.

File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
xmm.dat	77	221	Full dataset of clusters of galaxies

See also:
<http://pico.bo.astro.it/settori/abun/xmm.dat> : Updated full dataset

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

Bytes	Format	Units	Label	Explanations
1- 15	A15	---	Name	Cluster name
17- 22	F6.4	---	z	[0.09/1.4] Redshift
24- 28	F5.3	---	R0	[0/0.4] Inner-radius, fraction of R_{200}
30- 34	F5.3	---	R1	[0.1/1] Outer-radius, fraction of R_{200}
36- 41	F6.3	keV	T	[1.9/13] X-ray Temperature
43- 47	F5.3	keV	e_T	[0.05/4.3] Error on Temperature
49- 53	F5.3	---	Z	[0/1] Metallicity with respect to Anders and Grevesse 1989 (Geochim. Cosmochim. Acta, 53, 197)
55- 59	F5.3	---	e_Z	[0.02/0.5] Error on Metallicity, lower value at 1σ
61- 65	F5.3	---	E_Z	[0.02/0.5] Error on Metallicity, upper value at 1σ
67- 71	F5.3	---	sigma	[0.27/1.22] Pseudo-Entropy-Ratio σ (1)
73- 77	F5.3	---	e_sigma	[0.01/0.48] Error on Pseudo-Entropy-Ratio

Note (1): the Pseudo-Entropy-Ratio is defined as
 $\sigma = (T_0/T_1) \cdot (EM_0/EM_1)$, where
 T_0 = temperature measured in the inner region $r \leq 0.15R_{500}$
 T_1 = temperature measured in the outer region $0.15R_{500} \leq r \leq 0.4R_{500}$
 EM_0 = emission measure of the inner region
 EM_1 = emission measure of the outer region

Acknowledgements:
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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](#)

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