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Planck intermediate results

V. Pressure profiles of galaxy clusters from the Sunyaev-Zeldovich effect

(Corrigendum)

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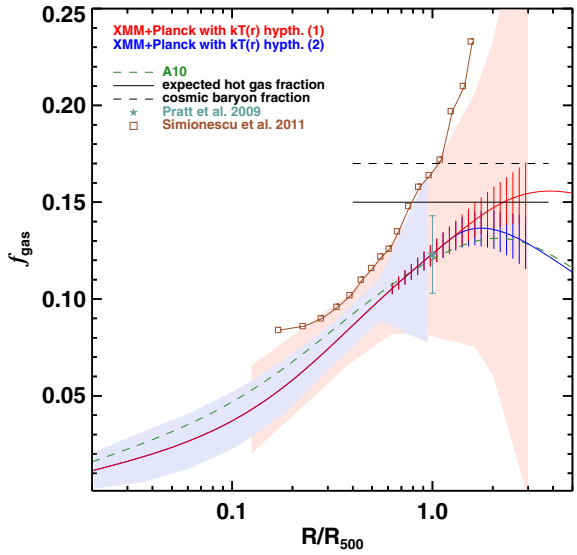

Fig. 7. Gas mass fraction profile derived from the combined *Planck* and *XMM-Newton* pressure profile, assuming for the temperature profile: (H1) the average best fit model across the sample from X-ray spectroscopy (red line and striped area); or (H2) the same but extrapolating beyond R_{500} to a constant value equal to the average temperature measured in the last radial bin across the sample (blue line and striped area). The green dashed curve marks the expected gas fraction profile assuming the A10 pressure profile and $kT(r)$ as in hypothesis (1). The star gives $f_{gas}(r = R_{500})$ for REXCESS clusters with $M_{500} > 5 \times 10^{14}\ M_{\odot}$ (Pratt et al. 2009). In maroon we reproduce the gas mass fraction profile derived from *Suzaku* measurements for the Perseus cluster (Simionescu et al. 2011). The solid and dashed black lines mark the cosmic baryon fraction expected from CMB measurements (Komatsu et al. 2011) and the expected gas fraction, assuming that 12% of baryons are in stars, respectively. The shaded blue and red areas translate the dispersion in the pressure profile across the ESZ–*XMM* sample as shown on Fig. 4 in our original paper, assuming hypothesis (H1) for $kT(r)$. See Sect. 7.3 in Planck Collaboration (2013)

Figure 7 of our original publication (Planck Collaboration 2013) is flawed. The correct figure is presented here and we stress that our original conclusion on the radial distribution of the gas fraction remains unchanged.

There was an error in the reconstruction of the temperature profiles used to derive the gas mass distribution from the joint *Planck* and *XMM-Newton* pressure profile, and thereby a prediction for the gas fraction profiles. The error in the temperature profile reconstruction applies to this paper only. The predicted gas fraction profiles for both hypothesis on the temperature profiles, i.e., from hypothesis H1 and H2, were affected similarly. Now corrected, they are in better agreement at R_{500} with the measurement by Pratt et al. (2009) on the REXCESS sample and with the expectations from the CMB. The Perseus profile (Simionescu et al. 2011) is still marginally compatible with our prediction within our large dispersion (shaded blue and red area on the figure).

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