

*Erratum*

## Asphericity of galaxy clusters and Sunyaev-Zel'dovich effect

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Equations (B.3), (B.4) and (B.6) in Appendix B must be replaced by the following expressions:

$$I_{\text{SZ}}^{\text{rot}}(r_x, r_z, \theta) = \frac{1}{\sqrt{\frac{\cos^2\theta}{\zeta_2^2} + \frac{\sin^2\theta}{\zeta_1^2}}} (1 + \eta_\theta)^{-\frac{3}{2}\beta + \frac{1}{2}} B\left(\frac{3}{2}\beta - \frac{1}{2}, \frac{1}{2}\right), \quad (\text{B.3})$$

with

$$\eta_\theta = \frac{r_x^2}{\zeta_1^2 \cos^2\theta + \zeta_2^2 \sin^2\theta} + \frac{r_z^2}{\zeta_3^2},$$

$$n_e^{\text{proj}}(r_x, r_y, r_z) = n_{\text{eo}} \left[ 1 + \frac{r_x^2}{\zeta_1^2} + \frac{r_y^2}{\zeta_2^2} + \frac{r_z^2}{\zeta_3^2} \right]^{-3\beta/2}, \quad (\text{B.4})$$

where  $\tilde{\zeta}_1$  is the maximum value that we get along the  $r_x$  axis in units of  $r_c$

$$\tilde{\zeta}_1 = \sqrt{\zeta_1^2 \cos^2\theta + \zeta_2^2 \sin^2\theta},$$

moreover,  $\tilde{\zeta}_3/\tilde{\zeta}_2 = \zeta_3/\zeta_2 = 1$  (prolate).

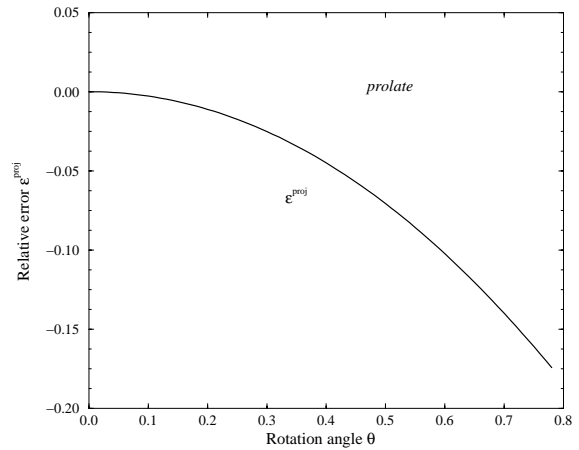
$$I_{\text{SX}}^{\text{rot}}(r_x, r_z, \theta) = \frac{1}{\sqrt{\frac{\cos^2\theta}{\zeta_2^2} + \frac{\sin^2\theta}{\zeta_1^2}}} (1 + \eta_\theta)^{-3\beta + \frac{1}{2}} B\left(3\beta - \frac{1}{2}, \frac{1}{2}\right). \quad (\text{B.6})$$

Thus also Figs. 7 and 8 get modified:

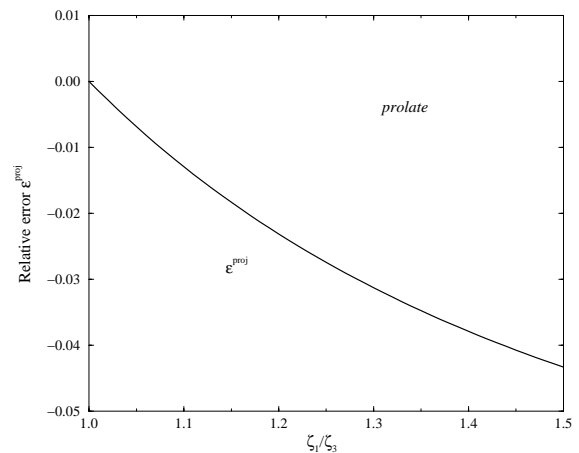
In Figs. 7 and 8 we have plotted the relative error due to the projection effects as a function of the rotation angle  $\theta$  and the axes ratio  $\zeta_1/\zeta_3$  of the ellipsoid. It is a pure geometrical effect and thus the same for the  $y$  parameter, the surface brightness and the Hubble constant. The maximal  $\theta$  is assumed to be  $\pi/4 \sim 0.785$ , for which we find an underestimation of almost 17%. The influence of the axes ratio turns out to be less than 5%.

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**Fig. 7.** The relative error, when comparing a projected and a rotated prolate-shaped cluster, is shown as a function of  $\theta$ . The axes ratio is fixed to be  $\zeta_1/\zeta_3 = 1.5$



**Fig. 8.** The relative error between a projected and a rotated prolate-shaped cluster profile is shown as a function of the axes ratio  $\zeta_1/\zeta_3$ . The rotation angle  $\theta$  is fixed at  $\pi/4$