

Examiner report

I thank the Examiner for the thorough read and useful comments on my thesis. My response to Examiner's questions are in blue.

**** Chapter 1 ****

page 2 Eq (1.4) units yr instead of yr

p. 3 Use Ω_Λ (capital Lambda) instead of Ω_λ to be consistent with the notations in the rest of the manuscript.

p. 10 Eq. (1.30) it should be $a_l^X m$ and not $a_l^T m$

p. 10 link to Fig. 1.4 not valid is show in Fig. ??

p. 14 typo Type Ia supernovaes are the excellent standard candles -> Type Ia supernovae are excellent standard candles theromonu- clear explosion -> thermonuclear explosion
The best measurement BAO scale come from CMB -> comes from Use H_o instead of H_O to have notations consistent across the manuscript.

I thank referee for pointing out the mistakes and I have corrected it accordingly in the updated manuscript.

**** Chapter 2 ****

p. 16 I don't understand how Eq. (2.12) is derived from Eq. (2.11). I think that Eq. (2.12) should be removed from the manuscript.

removed

p. 16 Eq. (2.14) Use \ln for logarithm

p. 18 and 19 Use $erfc$ exp \ln for these functions in math mode

p. 19 in a sphere of radius 8Mpc to be replaced by in a sphere of radius $8h^{-1}$ Mpc.

all the above corrections have be incorporated in the updated thesis.

**** Chapter 3 ****

p. 33 Use kappa instead of k in the paragraph between Eq. (3.4) and Eq. (3.5).

p. 47 Caption of Fig. 3.4 Remove space between b and l in b lack triangles

p. 53 Table 3.2 please specify the cluster mass and redshift in the caption. Cluster mass $2 \times 10^{14} M_\odot$ and redshift $z = 0.7$.

Changes have been made to the updated thesis as per referees comments.

**** Chapter 4 ****

p. 65 we have niether included -> neither

corrected

**** Chapter 6 ****

p. 102 last word astophysical to be corrected in astrophysical
[corrected](#)