

Lecture 10:
The Cosmic Microwave Background Part 2: Fluctuations in the
CMB

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March 14, 2018

$$d_{\text{hor}}(t_{\text{cmb}}) = a(t_{\text{cmb}})c \int_0^{t_{\text{cmb}}} \frac{dt}{a(t)} = 2.24ct_{\text{cmb}} = 0.251 \text{ Mpc} \quad (1)$$

$$\theta_{\text{hor}} = \frac{d_{\text{hor}}(t_{\text{cmb}})}{d_A} = \frac{0.251 \text{ Mpc}}{12.8 \text{ Mpc}} = 0.020 \text{ rad} = 1.1^\circ \quad (2)$$

$$C(l) = \left\langle \frac{\delta T_1}{T} \frac{\delta T_2}{T} \right\rangle_l \quad (3)$$