

In the name of God

Department of Physics
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ADVANCED TOPICS IN MODER COSMOLOGY

Exercise Set 6

(Date Due: 1393/02/30)

1. Suppose that at the present time, we have $\Omega_{tot}^0 = 1.00 \pm 0.10$, then compute
A : $\Omega_{tot}(t = 1sec)$?
B : $\Omega_{tot}(t = 10^{-43}sec)$?
2. If the value of $\Omega_{tot}(a = 10^{-6}) = 0.20 \pm 0.10$, then compute the value of Ω_{tot}^0 .
3. If the value of $\Omega_{tot}(a = 10^{-6}) = 2.00 \pm 0.10$, then compute the value of Ω_{tot}^0 .
4. Investigate the value of $\Omega_{tot}^0 = 1.0$ is a repeller fixed point.
5. Calculate the angular value of horizon at t_{CMB} . Check your results for Planck data set. Compute the ratio of homogeneous horizon with respect to horizon at CMB epoch.

Good luck, Movahed
