

HOMEWORK # IX

1. Is the Hubble expansion accelerating? Explain.
2. What is the cosmological constant Λ ? What is the energy density of dark energy in terms of Λ ?
3. What is the repulsive force due to dark energy in terms of Λ ?
4. What is the geometry of space if the average energy density of the universe is given by the critical density given by $3c^2 H^2 / (8\pi G)$?
5. According to the current flat model of the cosmos, what percentage of the critical energy density is believed to be due to: Luminous Matter, Dark Matter, Dark Energy?