



FYS 3610

Solutions Exercise Week 37

1) At apex: $v_{tot} = 3.1 \cdot 10^6$ m/s

$$v_{\perp} = 802 \cdot 10^3 \text{ m/s}$$

$$B_o = 1.11 \mu T$$

$$r_{g0} = 7.53 \text{ km}$$

At mirror point:

$$v_{\perp m} = v_{tot}$$

$$B_m = 16.6 \mu T$$

$$r_{gm} = 1.95 \text{ km}$$

2) $\frac{B_m}{B_{00}} \cdot L^3 = 14.94 \Rightarrow \varphi \approx 45^\circ$

$$h = 0.5 R_E = 3186 \text{ km}$$

$$\tau_0 = 28.5 \text{ s}$$