Hubbule parameter:

$$egin{align} H^2 &= H_0^2 [rac{\Omega_r}{a^4} + rac{\Omega_m}{a^3} - rac{Kc^2}{a^2 H_0^2} + \Omega_{\Lambda}] \ &= H_0^2 [rac{\Omega_r}{a^4} + rac{\Omega_m}{a^3} + rac{1-\Omega_0}{a^2} + \Omega_{\Lambda}]
onumber \end{align}$$

Comving distance:

$$dt=rac{da}{\dot{a}}\Rightarrow -dw=rac{cdt}{a}=rac{cda}{a\dot{a}}=rac{cda}{a^2H} \ w(z_1,z_2)=rac{c}{H_0}\int_{a(z_2)}^{a(z_1)}rac{da}{\sqrt{a\Omega_m+a^2(1-\Omega_m-\Omega_\Lambda)+a^4\Omega_\Lambda}}, z_1< z_2 \ =rac{c}{H_0}\int_{z_1}^{z_2}rac{dz}{\sqrt{(1+z)^3\Omega_m+(1+z)^2(1-\Omega_m-\Omega_\Lambda)+\Omega_\Lambda}}, z_1< z_2 \ =rac{c}{H_0}lpha(z_1,z_2)$$

The search radius is $Rh^{-1}Mpc$. Then, the search radius in arcmin is

$$egin{aligned} w heta &= rac{c}{H_0} heta lpha(z_1,z_2) = rac{c imes 10^5 Km \cdot s^{-1}}{100 h Km \cdot s^{-1} Mpc^{-1}} heta lpha(z_1,z_2) = Rh^{-1} Mpc \ \Rightarrow & heta &= rac{R}{1000 clpha(z_1,z_2)} rac{180 imes 60}{\pi} = rac{10.8 R}{c\pi lpha(z_1,z_2)} \end{aligned}$$

The $lpha(z_1,z_2)$