

Write a code to compute the passive evolution of luminosity for a stellar population whose star formation shuts off at time $t=0$.

Assume that at time $t=0$, the stellar population has a Salpeter mass function and contains stars of all masses in the range $0.08 - 50M_{\text{sun}}$

Calculate the total luminosity of the stellar population as a function of time in units of its starting luminosity L_0 . Then convert this to absolute magnitude: $M(t)-M(0)$, the difference between the absolute magnitude at time t and that at time $t=0$.

Plot $M(t)-M(0)$ as a function of time (make the x-axis run from 0 to 10Gyr).

Show all your steps and attach a printout of your code.