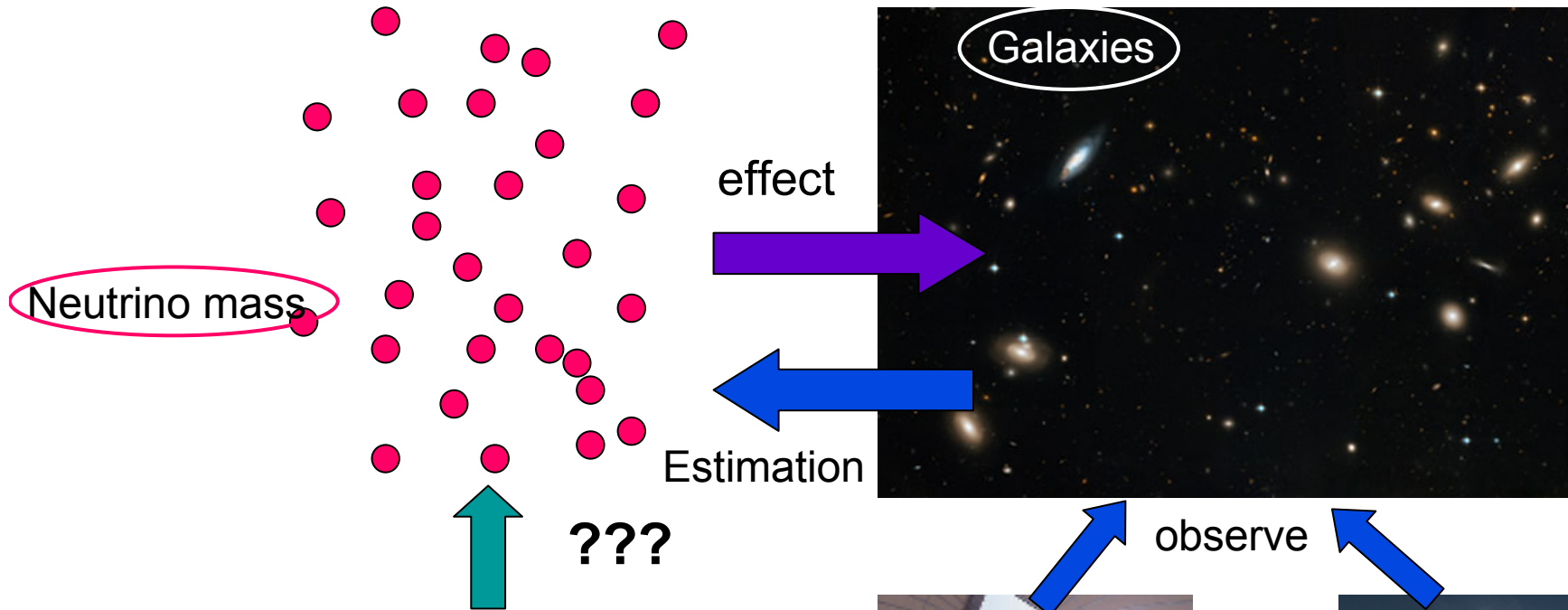


# Neutrino and Cosmology



$$E\psi = (-i\alpha \cdot \nabla + \beta m)\psi$$

$$R_{\mu\nu} - \frac{1}{2}g_{\mu\nu}R + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu}$$

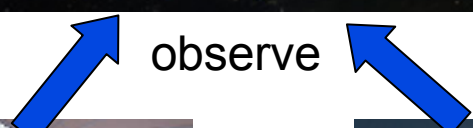
$$\left\{ \square + \left(\frac{mc}{\hbar}\right)^2 \right\} \psi(x) = 0$$

$$(i\hbar\gamma^\mu \partial_\mu - mc)\psi(x) = 0$$

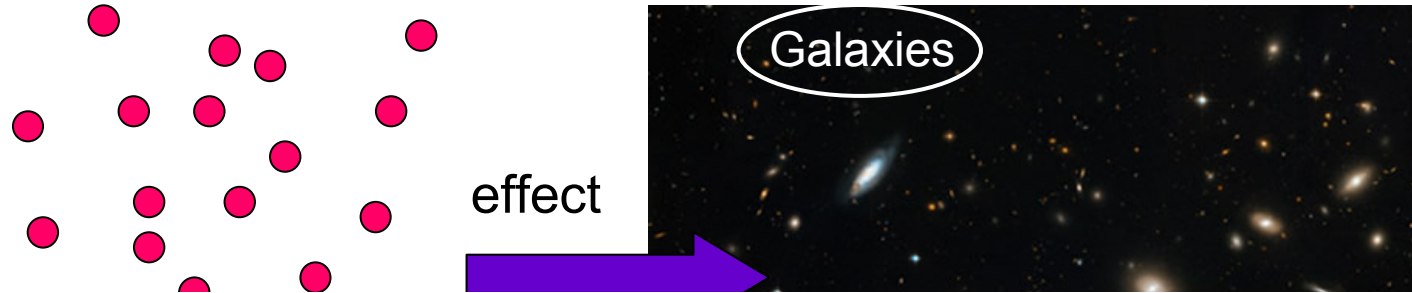
Physical experiment and standard theory



Astronomy



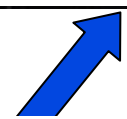
# Neutrino and Cosmology



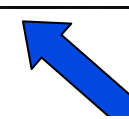
Neutrino When you observe the largest thing, you will realize the smallest thing!!



???



observe



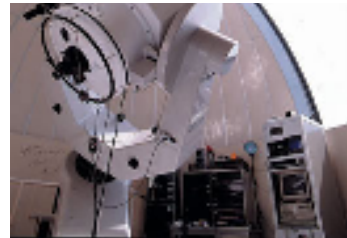
**It is very mysterious!!**



$$\left\{ \square + \left( \frac{mc}{\hbar} \right)^2 \right\} \psi(x) = 0$$

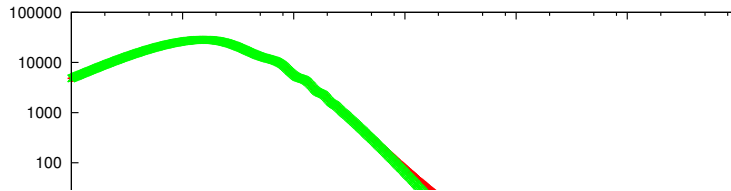
$$(i\hbar\gamma^\mu \partial_\mu - mc)\psi(x) = 0$$

Physical experiment and standard theory



Astronomy

# Now I am Challenging!!



When I finish my work,  
we will find the neutrino mass and many other things!!



Of course, solving problems is very difficult...but...

**It is very exciting to tackle the unknown!!**



**If You Are Interested In Astronomy...**



**Let's study with us!!**

**Thank you.**