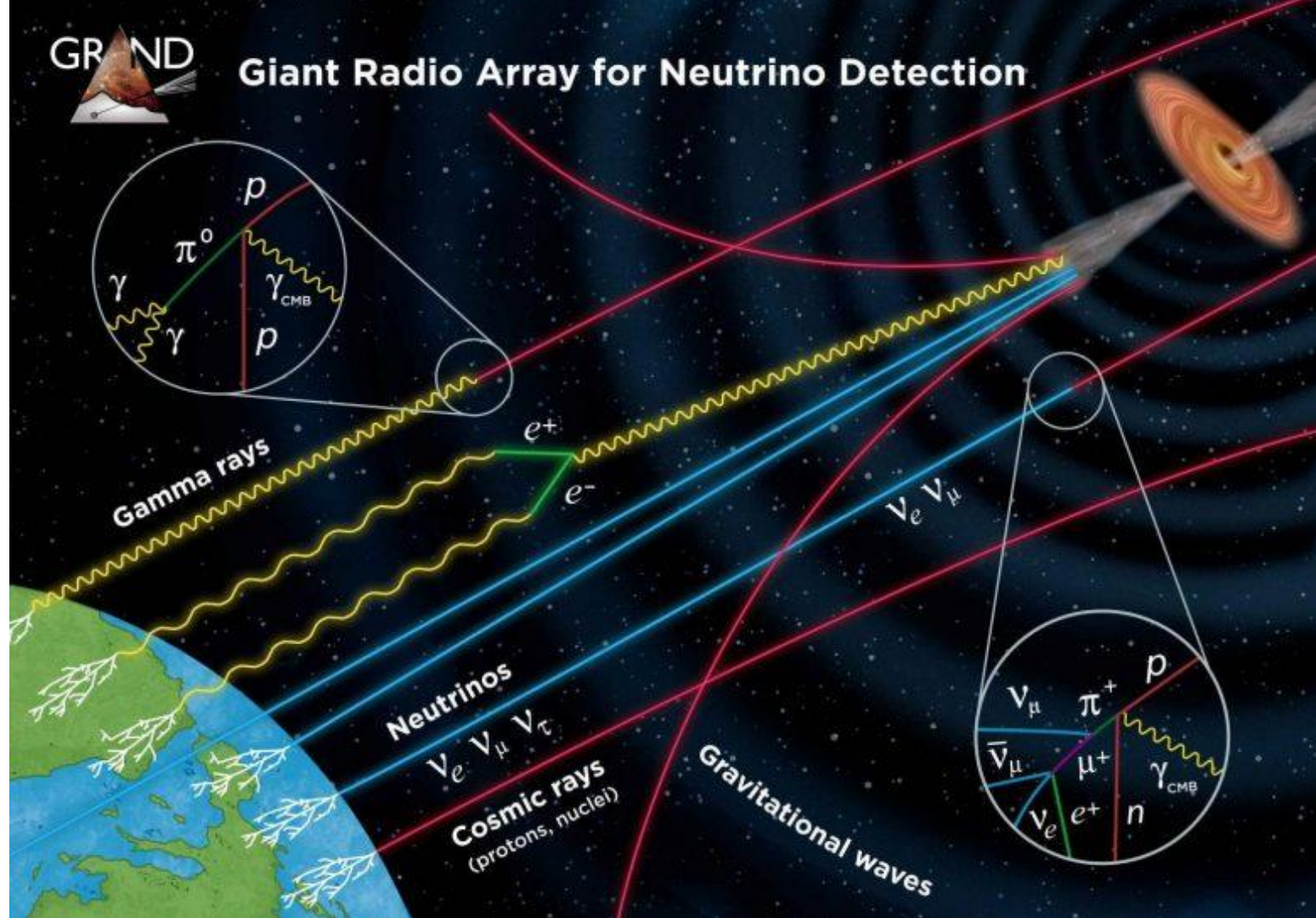


Neutrino Interactions in Antarctic Ice

Dennis H. Calderon

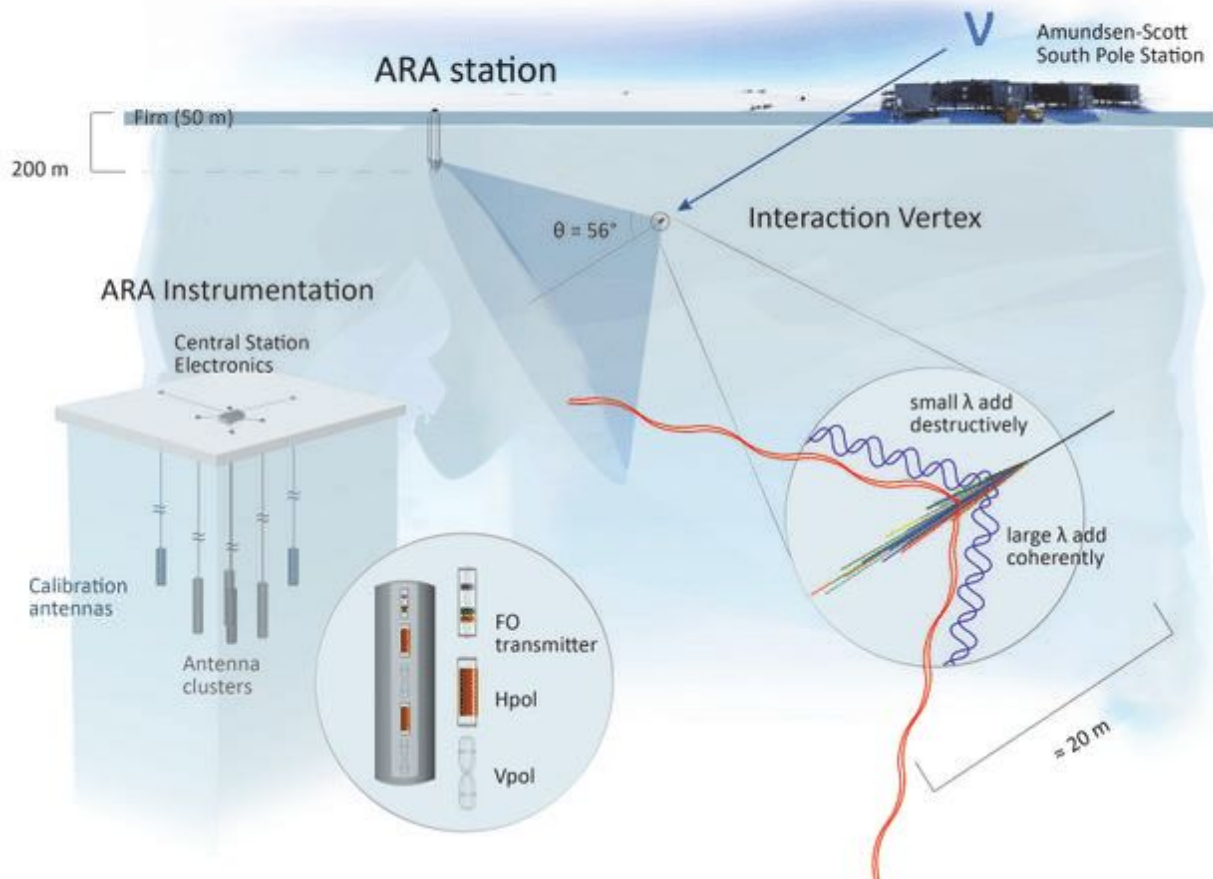


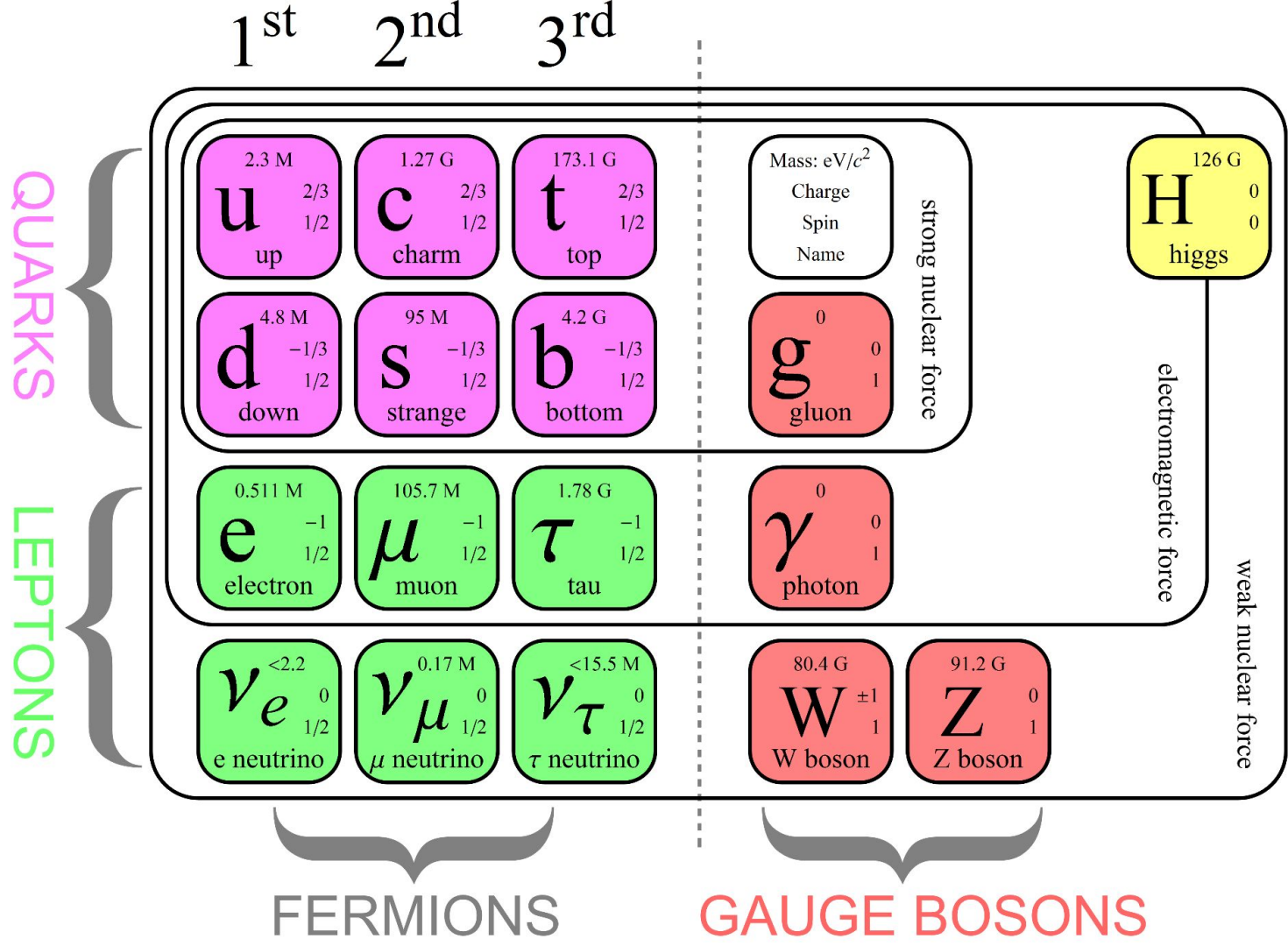
Giant Radio Array for Neutrino Detection



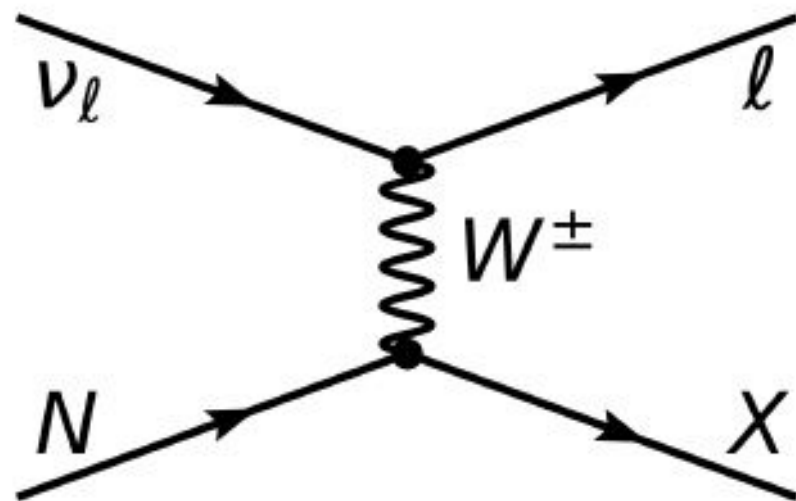


Detection of ultrahigh-energy neutrinos in ARA

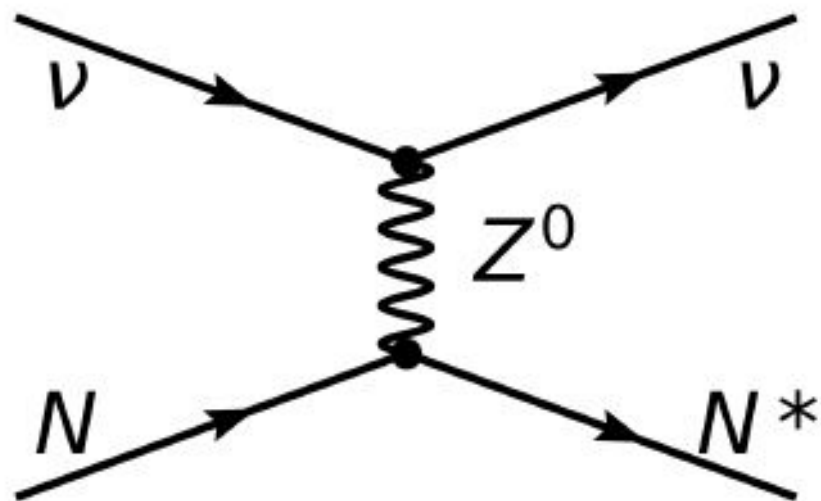


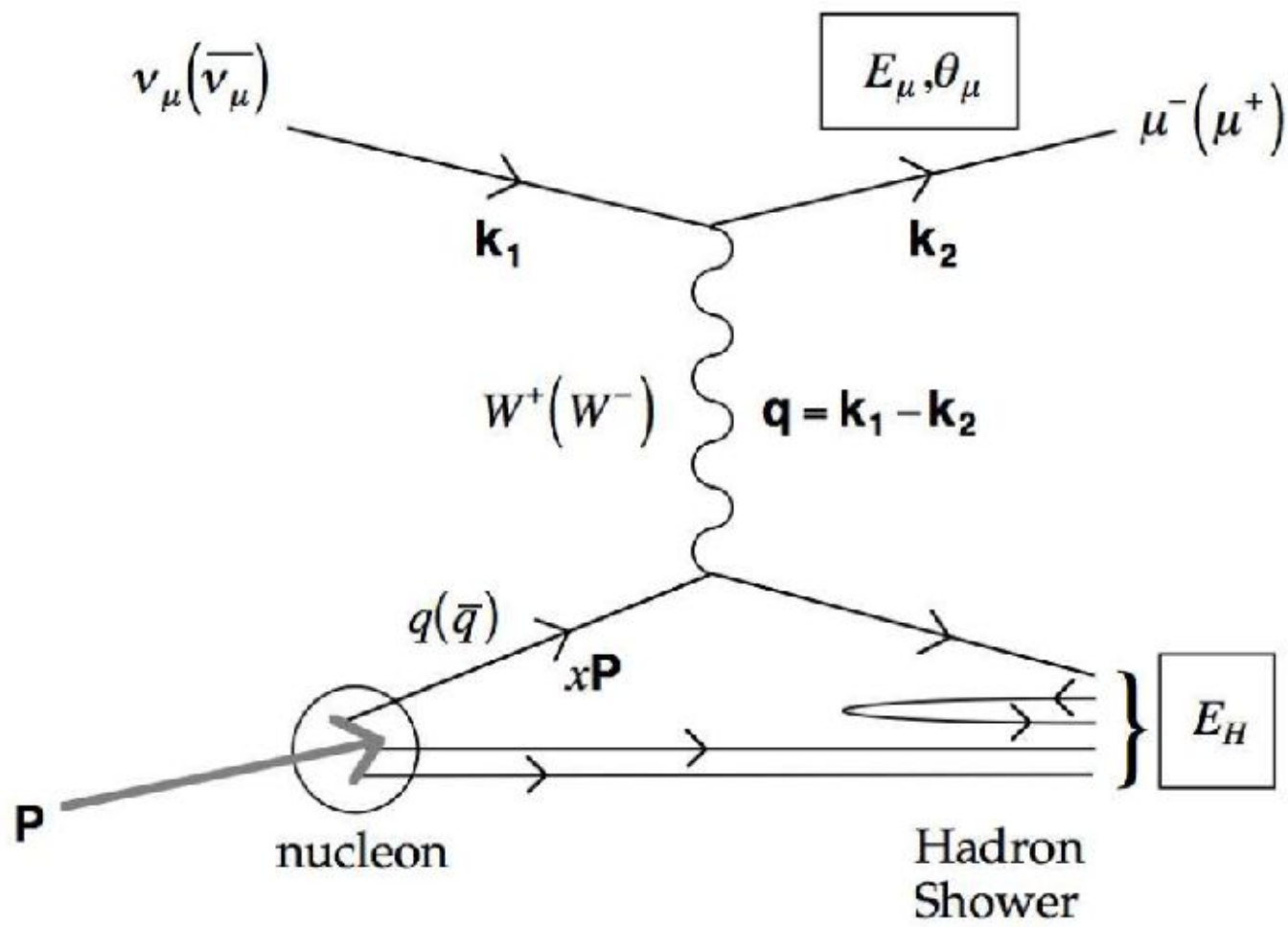


Charged-Current

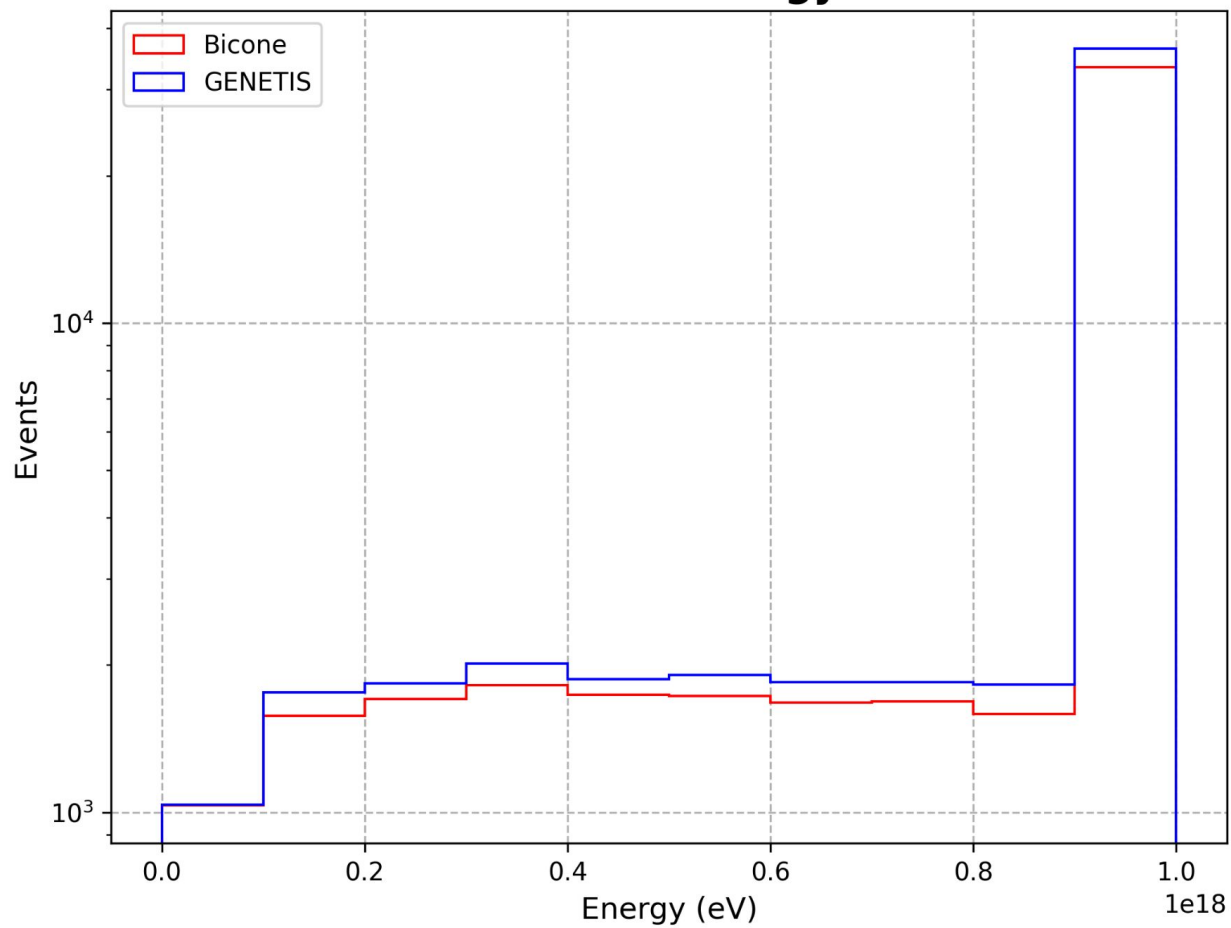


Neutral-Current





Shower Energy



File Edit Options Buffers Tools Python Help

```
Acurrent = []
Aflavor = []
Aelast = []
AShowerEnergy = []
Atrigg = []
Aweight = []

for i in range(totalEvents):
    SimTree.GetEntry(i)
    if (reportPtr.stations[0].Global_Pass > 0) and (eventPtr.Nu_Interaction[0].weight >= 0 and eventPtr.Nu_Interaction[0].weight \
<= 1):
        Atrigg.append(i)
        try:
            current = eventPtr.Nu_Interaction[0].currentint
            flavor = eventPtr.nuflavorint
            elast = eventPtr.Nu_Interaction[0].elast_y

            if current == 1 and flavor == 1:
                AShowerEnergy.append(energy)
                print(i)
            else:
                AShowerEnergy.append(energy*elast)
                print(i)

            Acurrent.append(current)
            Aflavor.append(flavor)
            Aelast.append(elast)
            Aweight.append(eventPtr.Nu_Interaction[0].weight)
        except IndexError:
            print("I have a bad feeling about this...")
            print(i)
```