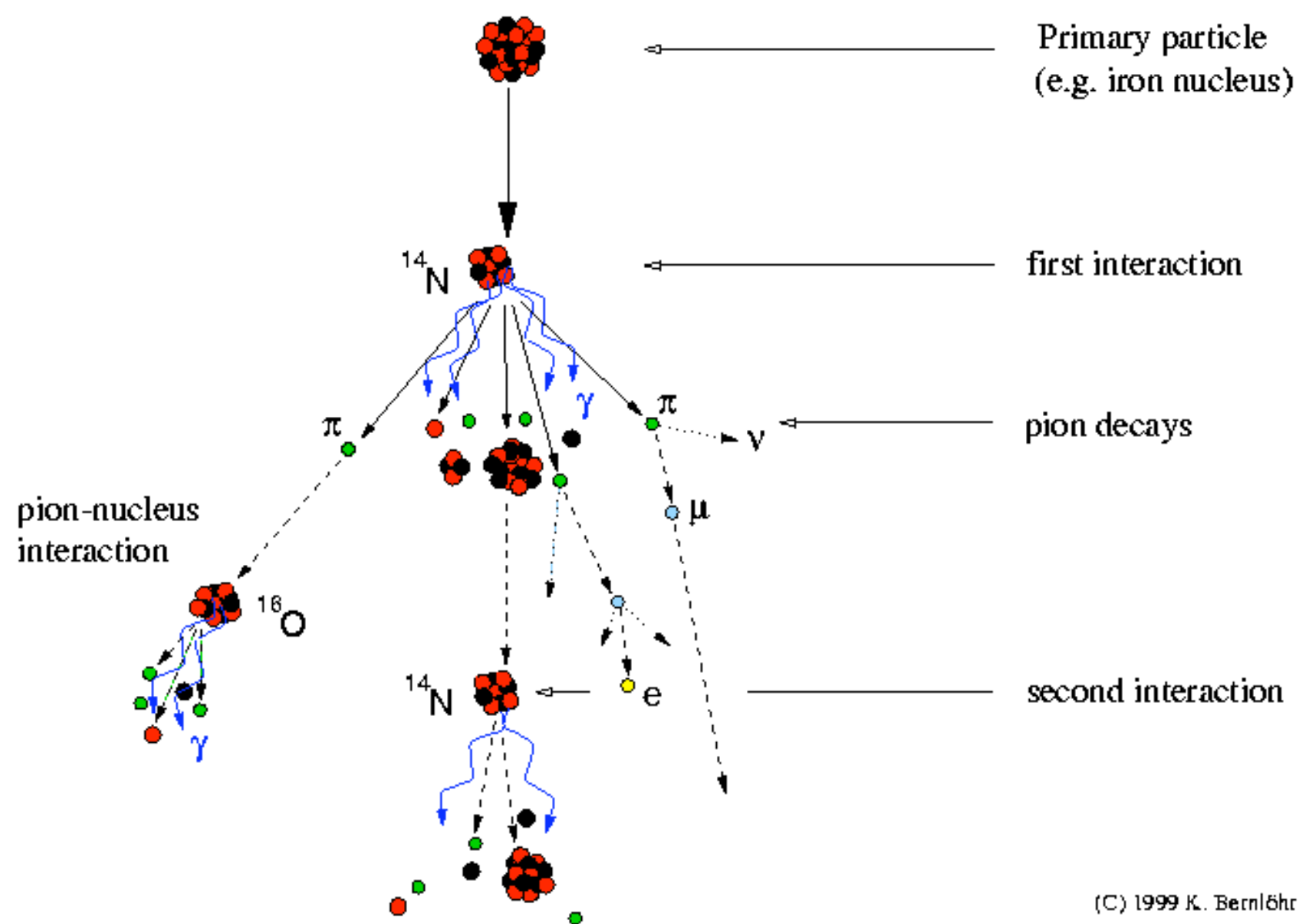


COSMIC RAY DECAY

Development of cosmic-ray air showers



www.mpi-hd.mpg.de/hfm/CosmicRay/shower.png

When a primary cosmic ray enters the atmosphere, it collides with an atmospheric nucleus and interacts with it. From this collision, a shower of particles is produced. These particles then collide with other nuclei in the atmosphere. This chain reaction of collisions and interactions of the cosmic ray is called a cosmic-ray shower or cosmic ray decay. The picture to the left is an example of how a cosmic ray might decay as it enters the atmosphere.

Resources:

"Cosmic Ray." *Encyclopædia Britannica*. 2006. Encyclopædia Britannica Premium Service. 31 July 2006 www.britannica.com/eb/article-9026471

High Energy Cosmic Rays.

14 Aug. 2001. Stanford University. 26 July 2006 www2.slac.stanford.edu/vvc/cosmicrays

COSMIC RAY BOX

INSTRUCTIONS:

1. Open flap by turning the knob on top of the box counterclockwise. Using the rods on the right, push the balls into the elevator box. Close the flap by turning the knob clockwise when all of the balls are in the elevator box.
2. Guide the elevator box to the top of the Cosmic Ray Box and dump its contents into the Cosmic Ray Box, making sure that all of the rods are completely extended.
3. Watch as the "particles" (balls) fall through the different levels. If the balls get stuck use the rods to guide them to the right level.
4. When the particles are at the correct level, it will look as follows:

White Ball – Nucleus
 Yellow Ball – Neutron
 Purple Ball – Proton
 Pink Ball – Pion

Blue Ball – Electron
 Orange Ball – Positron
 Red Ball – Muon
 Green Ball – Neutrino

