

The diagram illustrates the vertical distribution of three soil properties: Soil water content, Temperature, and CO<sub>2</sub> concentration. A horizontal line separates the 'Aboveground' region from the 'Belowground' region. Three vertical lines represent the profiles of these properties. Soil water content (blue circles) is highest in the topsoil and decreases with depth. Temperature (red circles) is highest in the topsoil and increases with depth. CO<sub>2</sub> concentration (green circles) is highest in the topsoil and increases with depth.

Atmospheric pressure

Aboveground

Belowground

Soil water content

Temperature

CO<sub>2</sub>

The diagram illustrates the relationship between  $\text{CO}_2$  concentration, diffusivity, and flux across different depths (Aboveground, Belowground). The vertical axis represents depth, with 'Aboveground' at the top and 'Belowground' below. The horizontal axis represents increasing values from left to right, indicated by an arrow labeled 'Increasing'.

Three main components are shown:

- $\text{CO}_2$  (Green Circles):** Concentration increases with depth. A solid line connects the green circles, showing a downward trend. A dotted line also connects the green circles, showing a more gradual increase with depth.
- Diffusivity (Yellow Circles):** Diffusivity is represented by yellow circles. A dotted line connects the yellow circles, showing a slight increase with depth.
- Flux (Cyan Circles):** Flux is represented by cyan circles. A dotted line connects the cyan circles, showing a slight increase with depth. The flux values are labeled  $F_{000}$ ,  $F_{110}$ ,  $F_{101}$ , and  $F_{011}$ .

Arrows indicate the direction of increasing values for each component. The flux values are shown as curved arrows pointing from the cyan circles.