

ESS 431 PRINCIPLES OF GLACIOLOGY
ESS 505 THE CRYOSPHERE

Lecture 03 – Physical Properties of Ice

Due Wednesday, October 4 2017, at start of class

<p>Marshall, S., 2012. <i>The Cryosphere</i>. Chapter 2. Runnels, L.K., 1966. Ice. <i>Scientific American</i>, Dec 1966, 118–126.</p>

- 1) What is a “triple-point”?
- 2) What is “albedo? How does it vary as a function of grain size in snow?
- 3) How does charge conduction in ice differ from charge conduction in other semiconductors?
- 4) On a single axis, sketch the density of H₂O as a function of temperature, assuming everything below 0°C is ice and everything above 0°C is water. Next to this plot, sketch and label the bond angle for an H₂O molecule in ice and an H₂O molecule in water. How do these sketches help explain the density of water from 0°C – 4°C?