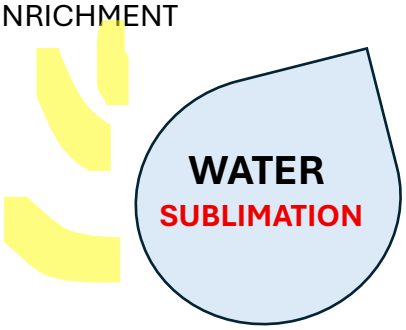


Water ice covers about 10% of Earth's surface. Its presence promotes a temperate climate. Too little ice means more solar radiation is absorbed and the Earth heats up too much. Too much ice and the Earth is too cold. God "...created Earth to be inhabited." Is 45:18

Water evaporates without boiling and, in some situations, without entering a liquid phase – ice to water vapor. This unusual effect has 3 main causes. The photoelectric effect on water molecules, vapor pressure change, and adding kinetic energy can all cause water ice to vaporize.

REVIEW:

1. Energy in motion is known as:	KINETIC	POTENTIAL
2. Stored energy, such as gas in a gas tank, is known as:	KINETIC	POTENTIAL
3. Thermal energy (heat) represented by vibrating atoms is:	KINETIC	POTENTIAL
4. The photoelectric effect causes electrons to escape:	KINETIC	POTENTIAL
5. A storm cloud (holding water above earth):	KINETIC	POTENTIAL
6. Potential lightning storm (in the storm cloud)	KINETIC	POTENTIAL

Lightning itself, and the great expansion that occurs causing thunder, are kinetic energy.

Vapor pressure "equilibrium" is the point (pressure & temperature) where condensation potential equals evaporation potential. Any change in conditions (pressure/temperature) will cause one or the other to occur.

SUBLIMINATION CAUSES:

Photoelectric/molecular effect	Kinetic Energy	Vapor Pressure Drop

1. ___Kinetic Energy___ Circulation energy is transferred to an ice molecule increasing its vibrational/thermal energy causing sublimination

2. Photoelectric/molecular effect "Zapping" ice with light/photon energy creates a phase change.

3. _Vapor Pressure Drop moisture saturation inside a freezer circulation system pumps water out of foods.

4. Photoelectric/molecular effect snow evaporates off the street although air temperatures remain well below freezing.

5. ___Kinetic Energy____ wind whips ocean water into the air creating water vapor and salt deposits on local buildings.

6. _Vapor Pressure Drop_ humidity drops over an icy surface resulting in sublimination.

7. ___Kinetic Energy_____ dramatic temperature rises.