

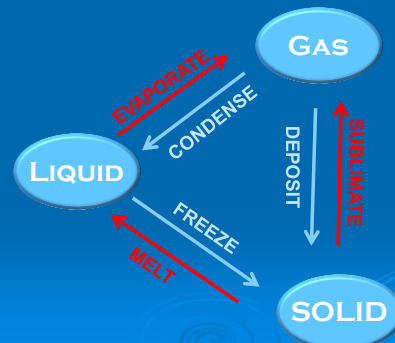
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METEOROLOGY

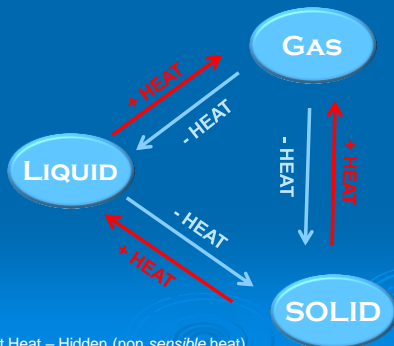
9 WATER IN THE ATMOSPHERE



Transitions of States of Water



Transitions of States of Water



Latent Heat – Hidden (non sensible heat)

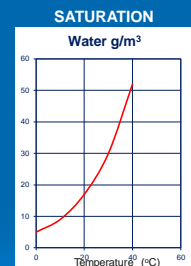
H₂O in Atmosphere

➤ Saturation

- Equal rates of evaporation and condensation

➤ Relative Humidity

- Comparison of water in the air to the amount when air is saturated. (depends on temp.)



Psychrometer



Psychrometer Relative Humidity %

Difference between wet and dry bulb (°C)

	1	2	3	4	5	6	7	8	9	10
0	81	64	46	29	13					
2	84	68	52	37	22	7				
4	85	71	57	43	29	16				
6	86	73	60	48	35	24	11			
8	87	75	63	51	40	29	19	8		
10	88	77	66	55	44	34	24	15	6	
12	89	78	68	58	48	39	29	21	12	
14	90	79	70	60	51	42	34	26	18	10
16	90	81	71	63	54	46	38	30	23	15
18	91	82	73	65	57	49	41	34	27	20
20	91	83	74	66	59	51	44	37	31	24
22	92	83	76	68	61	54	47	40	34	28
24	92	84	77	69	62	56	49	43	37	31
26	92	85	78	71	64	58	51	46	40	34
28	93	85	79	72	65	59	53	48	42	37
30	93	86	79	73	67	61	55	50	44	39

Due to Evaporative Cooling

Psychrometer Relative Humidity %

Difference between wet and dry bulb (°C)

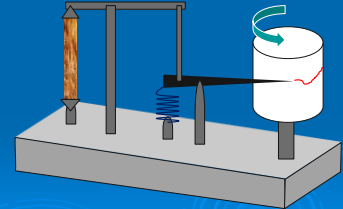
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Due to Evaporative Cooling

Bad Hair Day ?



Hair Hygrometer



Human (and animal) hair stretches with greater humidity

Measuring H₂O in Atmosphere

- Electrical hygrometer
 - Uses electricity passed through a moisture absorbing chemical.



Psychrometer Relative Humidity %

Difference between wet and dry bulb (°C)

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Due to Evaporative Cooling

Moisture coming out of air

- Dew point
 - Air is saturated
 - Temperature where evaporation and condensation rates are equal
 - Relative Humidity = 100%
- What will happen when air temperature drops?



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