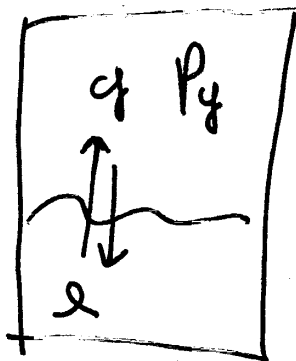
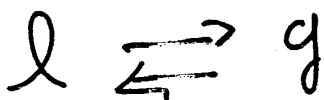
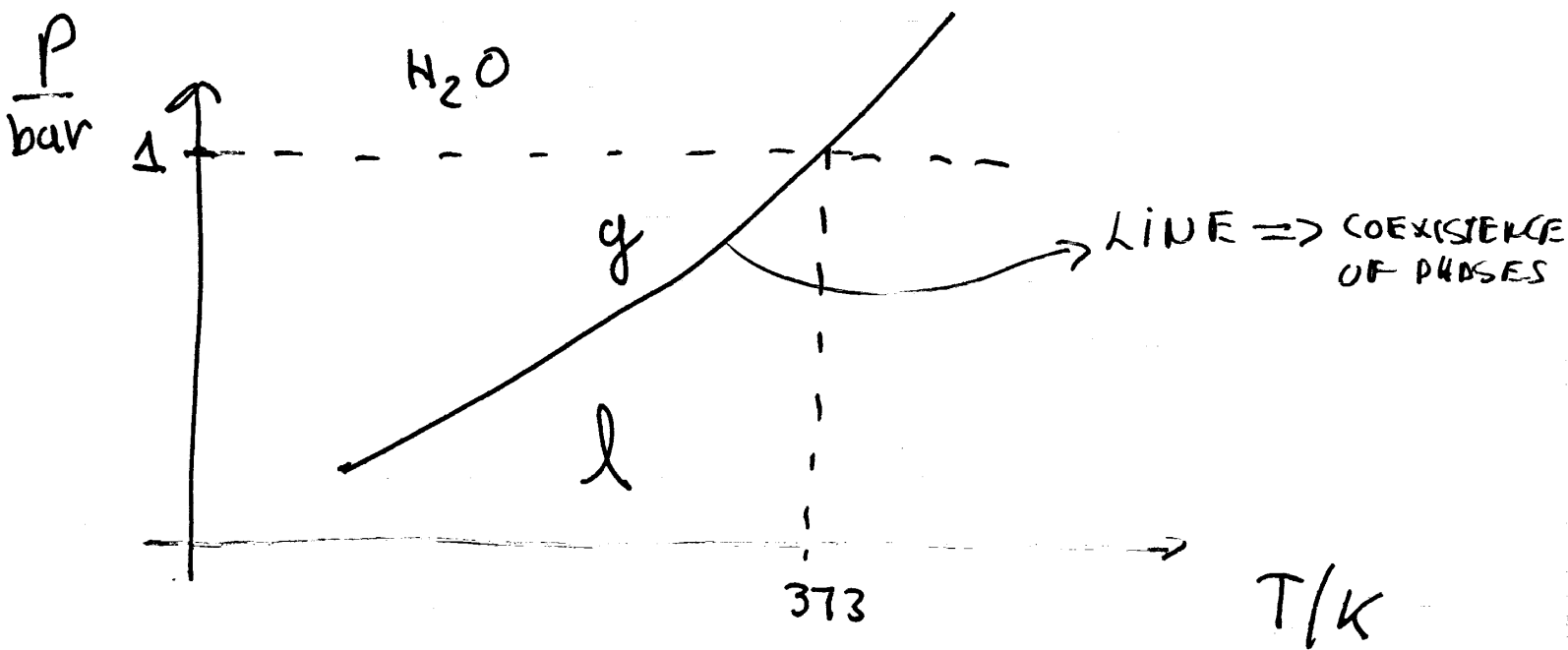


PHASE EQUILIBRIUM

FREEZE THE SAMPLE, EVACUATED AND WARM UP. FINALLY MEASURE THE VAPOR PRESSURE



BOILING \equiv When vapor pressure is equal to the atmospheric pressure (1 atm)



$$K = P_g / \text{bar}$$

PHASE TRANSITIONS

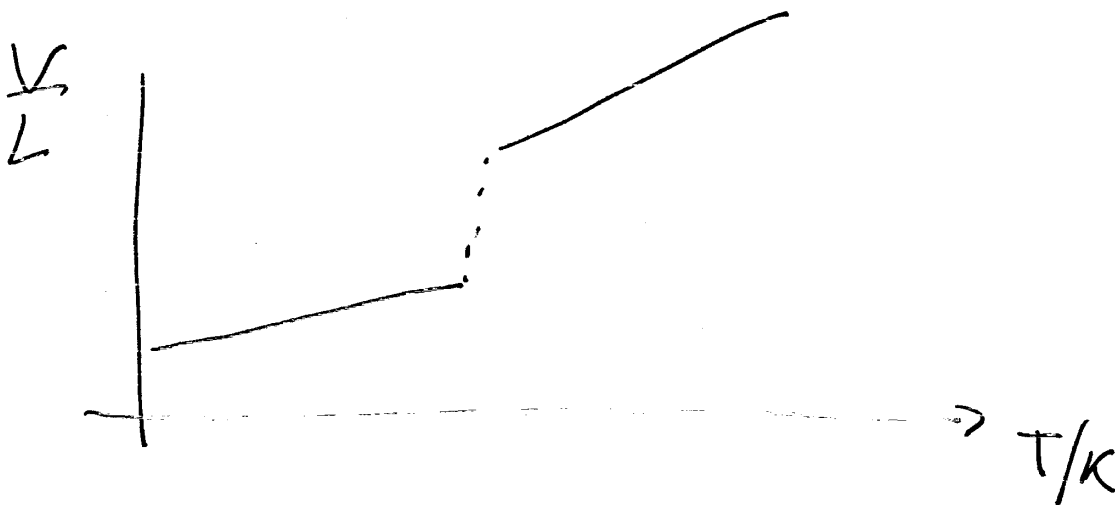
Liquid \rightleftharpoons VAPOR

Liquid \rightleftharpoons SOLID

SOLID \rightleftharpoons VAPOR

FIRST-ORDER PHASE TRANSITION

Volume shows a sharp discontinuous change from one phase to another



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IRVING LANGMUIR + VINCENT J. SCHAEFER

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Dry ice pellets \rightarrow formation of ice crystal
in clouds (supercooled
cloud)

Solid CO_2 and AgI (seeds)

water droplets \rightarrow freeze

\rightarrow ice crystal grows as vapor
condenses on the solid