Phase Transitions and Critical Phenomena
Characteristic surface of a pure substance
Projections on planes $(p,T), (p,v)$,
Characteristic surface for water
Liquid Crystal Phases

Isotropic Liquid

Nematic Phase

Phase Sequence: $I \leftrightarrow N \leftrightarrow A \leftrightarrow C$

Smectic C Phase

Smectic A Phase
Amphiphile molecules

Lamellar phase
Critical phase transition in a fluid. Observing critical opalescence
Law of corresponding states, first hint of universality

From Guggenheim