Temperature

1. Temperature is a concept for motion in microcosm, dimensionally dimension degree 0/00 in this model:

When, with rising temperature in an atom lattice, the oscillation amplitude of the particles exceeds about 1/10 of the length of the bond between them, the bond is breaking, so it´s said. This number relation could eventually be thought of as originating from the last step 1→ 0/00 in the dimension chain, read as numbers.

2. **Factors in kinetic energy of gases dimensionally interpreted:**

Formula:

$$E_w = \frac{m \times v^2}{2} = \frac{3(\rightarrow 5 \star 7)}{2} \times c \times T$$

Ew = kinetic energy; constant; temperature

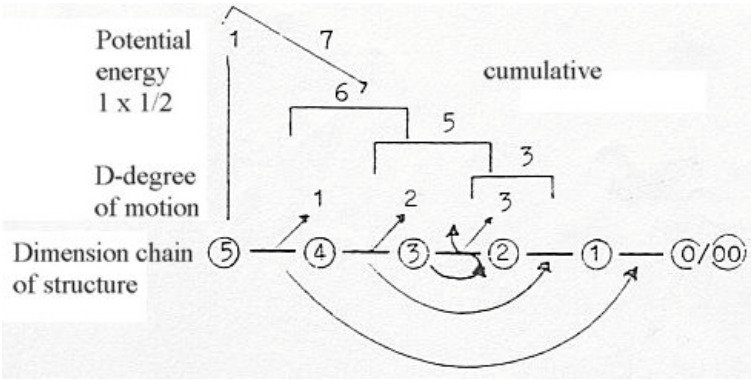
Interpretation of the d-degrees of motion:

Vibration: = motions towards / from each other,
d-degree step 1 → 1a/1b.

Rotation: = a) around own centre c_{10}, b) around bond centre c_2, (2 planes) in
d-degree step 2 → 2a/2b

Translation: = rectilinear motions in 3 co-ordinates of space (path movements) in
d-degree step 3 → 3a/3b.

Motions of d-degree 1 - 2 - 3 in the dimension chain of structure:



Energy Ew, numbers 7 - 5 - 3:

Monatomic gas: Translation: 3 x ½ k x T = 3/2 x k x T
Two-atomic gas, also: Rotation: + 2 x ½ k x T = 5/2 x k x T
Vibration: + 2 x ½ k x T = 7/2 x k x T

Hence, vibration and rotation concern only two-atomic gases, while translation concerns

monatomic gases too. Two-atomic gases, with bound atoms, could be seen as representing a higher d-degree.

We can observe the increasing one-way direction of the motion, from vibration to rotation to translation, *from the viewpoint of an individual co-ordinate axis*, this in accordance with the general aspects on the dimension chain in this model, that multi-directions gradually"crystallise" or are more precisely defined, that is more and more one-way directed, towards lower d-degrees.

Numbers 7-5-3: note numbers of a dimension chain: 543 + 210 = 753.

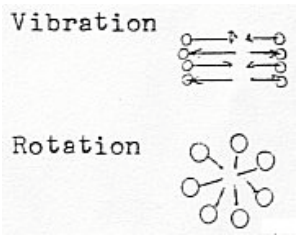
A note about "mi-cells":

Concerning the relation vibration - rotation: compare so called "mi-cells" in cell-biology:

- Vibration gives a picture of mi-cells in laminar order, an arrangement when density is high.

Vibration out of d-degree step 5 → 4, density as the physical quantity.

- Rotation gives the picture of mi-cells in circular order, the arrangement when density is lower.

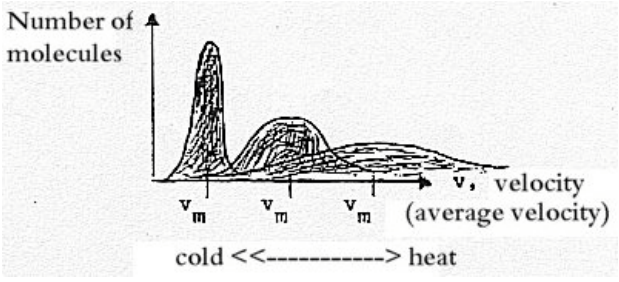


3. Temperature in relation to velocity:

Temperature has also been defined as

"a measure of the width of the spreading of velocities" of particles. (The quotation from a context concerning molecules.)

The higher temperature, the greater spreading of velocities of the molecules. (Valid in volumes of lower density at least. For gases, plasmas?)



(Inversely then the fusion scientists should be able to get higher temperatures in their plasmas with some kind of velocity spreader, shouldn't they? But fusion should rather demand the opposite, the same velocity for all nuclei, gathering them.)

Outer poles of temperature, extrapolated, would give v_{max} - v_{min} in right angles towards one another, the bar of molecules falling together with the co-ordinate axes in the figure above. Hence, cold and heat can be seen as perpendicular quantities dimensionally.

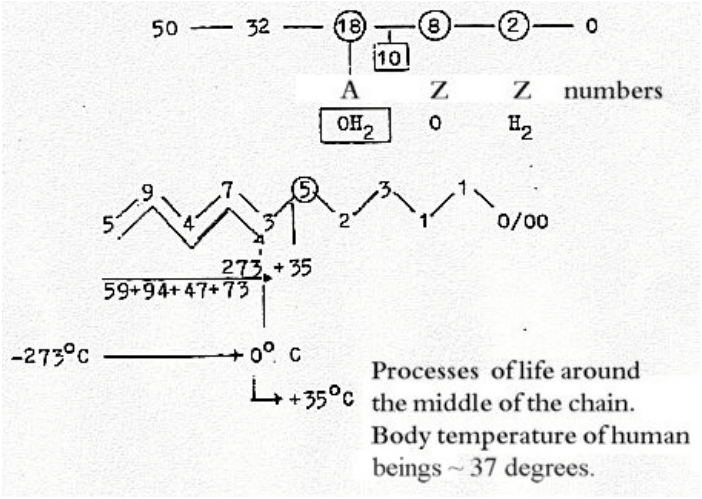
The different aspects on temperature as velocity spreading could perhaps elucidate the relation between the physical quantities Temperature (in dimension degree 0/00) and

Density (in d-degree 4 with outer poles = 0 and 00), and an inversion from radial to circular form between vector fields in d-degree step 4→3 to 3-dimensional masses?

T**emperature: degree numbers**
- read in a dimension chain:

If just the division into degrees of the Celsius scale should have any general validity, which seems absurd, it should depend on the fact that water, H_2O, is central in life, and in the dimension chain: that it "happens to be" just the atmospheric pressure on the earth surface that gives level development to life, which here is supposed to develop along a main axis of levels.

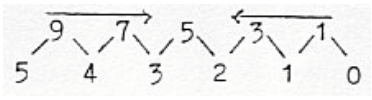
Numbers of H_2O in a $2x^2$-chain, x = 5-3-3-2-1-0:



(An amusing thing: reading numbers in opposite direction of that giving number 273, temperature interval in water in solid phase, one gets 37+74+49+95 = 255. 255 Kelvin = 0°. Fahrenheit. But not the freezing point of water.)

According to earlier interpretation temperature motions originate from d-degree steps 5→4, 4→3, 3→(2), as from steps inwards from the other end of the chain, (3) ← 2, 2 ←1, 1 ←0/00. One could then imagine that the development of temperature went on through the 3-2-step "perpendicular" to the chain towards superposed levels.

A couple of number operations:



$\sqrt{97/13} \times 10^2 =$ **273,158**

Cf. $\sqrt{(975 / 135)} \times 10^2 =$ 268,74.

Critical temperature of He = 268°
Boiling point of He = 269°...

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