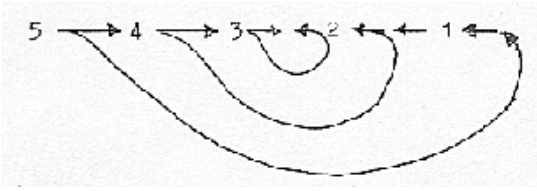
Mass and Vacant Space - additional notes

1. Waves before mass and matter?

The model here, as a dimensional chain from d-degree 5 to degree 0/00 of motions could be interpreted as presuming a big mass in an empty space before it gets split up in charges and waves... But a d-degree chain can be read in double directions, the "branched off" d-degrees meeting"the other
way around:



With step 4 → 3 there is 2 d-degrees "lost", enough to define motions, distances and 2-dimensional waves in inward direction - these acting as polarising force on a 3-dimensional "volume" according to the model.

2. **Matter waves:**

With this dimensional model it is quite natural that matter also can be described as dissolved in waves. It becomes a question of level of analysis, which is optional: which d-degree is seen as structure, which as motions.

As said before, matter should be possible to describe as built-in movements, as conglomerated, curly lines or as stratified shells (seen from lower d-degrees
2 ← 1 ← 0/00).

According to some vague statement Matter waves follow other equations than electromagnetic waves (EM-waves), and so they reasonably should according to the model here:

- They "should be" of a higher d-degree (presuming the property Mass in relation to Charge as a d-degree relation 3 to 2).
- They "should" include components which in the next step (inverted?) could appear as electromagnetic waves.
- They ought to be double-directed in some respect in comparison with EM-waves.
- There should exist another phase displacement between the components than in EM-waves.
- The vibrations of Matter should perhaps be "at straight angle to" or just angled in relation to EM-waves.

However, the formulas which describe the relations between mass, wavelength and velocity for matter waves and EM-waves respectively is of the same kind with only one distinction, that between the velocity of light and relative velocity of masses, c versus v:

Photon, mass $m = h \times 1/(c_o \times \lambda)$
Matter wave: $m = h \times 1/(v \times \lambda)$

Is this the only truth about matter waves? No answer here.

If we isolate the time factor in the formula for the mass, 1/v = Time /Distance, we get that the mass for matter waves decreases when time approaches infinity.

Simultaneously, according to the relativity theory, does the mass increase and approach 00 when v increases, asymptotically approaches c, In this contradiction then we could find the inverse relation in directions between matter waves as inward directed energy (equivalent to the mass property) on one hand, and the external motions of masses as outward directed kinetic energy, on the other.

The "mass" of the photon should increase with decreasing velocity, i.e. when passing through denser media than vacant space.

An added note: Much of the "mass" in "black holes" could eventually be contributed by the imprisoned light with very low velocity?

3. Splitting up of a "whole Mass":

It is rather easy to imagine how wave motions in 3 dimensions can differentiate the masses, as through longitudinal vibration (motions to and from each other) in vector fields, shell creating as through surfaces in positive and negative curvature, a spherical stratifying through diffraction in different amplitudes and frequencies, through interference and counterdirections giving "standing waves" - an alternately concentration - rarefying, an alternately amplification and extinguishing (as in standing waves), defining centres and anti-centres and energies of positive and negative signs.

We have interference even among electrons too **-** and among human beings, grouping together, creating intervals to other groups!

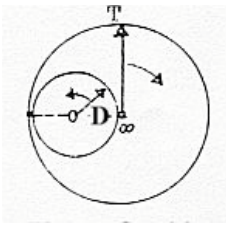
Velocity as splitting?
All points along the radius of a gramophone record have the same angle velocity. If angle velocity (as a function between radial co-ordinate axes) is "inverted" to the same orbit velocity along the circle, for all grooves of different "amplitude", we should get a breaking up of the record in separate grooves - and separate points if the grooves were spiral orbits. Indeed, a very effective disintegrating "inversion".

Footnote:
We could perhaps think of Distance and Time, (D/T) when interpreted as the 2 poles out of d-degree 1: 1a and 1b - as two rotating vectors in a unity circle, mutually polarised in 4 different respects:

- in the starting point: one starting from 0, the other from 00,
  a polarisation in amplitude too.
- in direction inwards / outwards, translated into clockwise / counter clockwise rotation,
- in phase, with phase displacement (11,25° ?) at start,
- in angle velocity (implying varying phase displacement)

Moreover we could imagine a pole exchange where the vectors meet, giving alternately quotients of type + c and 1/c, or +c/-c, negative or positive energy… The position displacement of the starting points as a Heisenberg´s uncertainty, perhaps also with a correspondence in Macrocosm?

An apparatus for polarising masses - vacant spaces!



4. Some numbers:

Assuming angle steps through the dimension chain and halvings, we have 90° at d-degree 3. That is an ordinary 3-dimensional co-ordinate system, with 8 space quadrants. Compare the presumption of an "energy number" 8 E for the potentials in d-degree 3, equal to the sum of the outer poles 4a and 4b.

$2^8 = 256$. 2 as log base in polarizing inward direction?

2^{256}= ca. 10^{77} = estimated number of atoms in Universe (1973 !)

<u>3 — 2-step, read as numbers 32---23, 10-power figures:</u>

32: Mass of Universe ca 10^{50} kg = 10^{77} nucleons times volume for a nucleus, the cubic of ca. 10^{-15} m = 10^{32}.

23 x 2:

= 46: 10^{46} becomes the volume of the vacant space at a multiplying, "perpendicular" relation between the poles Mass --- Vacant space.

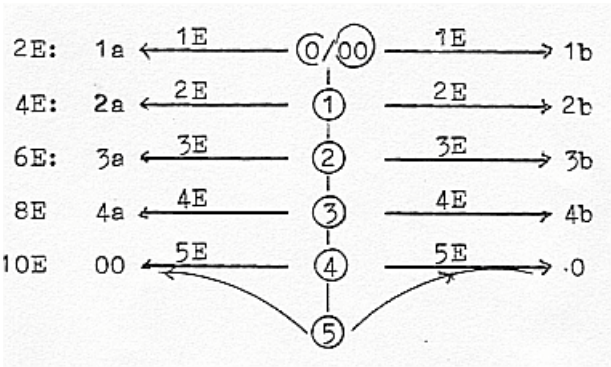
32 + 46

= 78 10^{78}: Volume of Universe with radius estimated to ca. 10^{26} meters. (1973)

23 x 2

= 46: Also the volume of 10^{77} H-atoms with Bohr-radius 5,29 x 10^{-11} meters will be 10^{46}. (Atoms as "matter" = structure composed of masses and vacant space.)

Compare perhaps E-number products in the dimension chain:



<u>D-degrees:</u>

4	x	3	:	10	x	8	E	=	80
3	x	2	:	8	x	6	E	=	48
2	x	1	:	6	x	4	E	=	24
1	x	0/00:		4	x	2	E	=	8

Sum 160

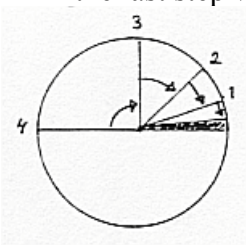
10 powers:
Volume of Universe, 78, cf. 80
Volume of empty space: 46, Cf. 48
Volumes of nucleons: 32. Cf. 24 + 8.

5. The lacking Mass or Matter of Universe:

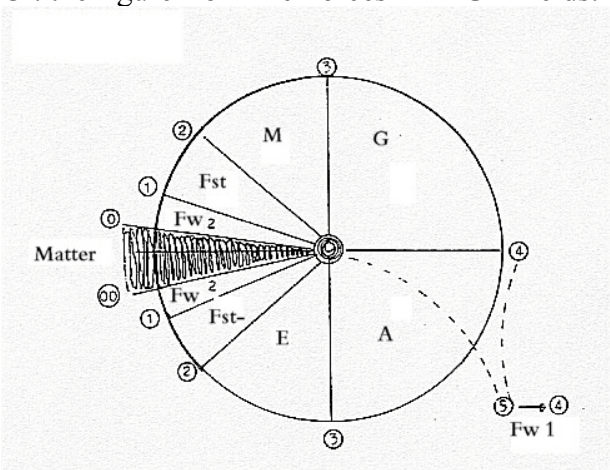
Physicists have for a rather long time missed a great part of the Universe's mass, estimated necessary to explain things. Some decade ago it was said to be about 97 % of the mass.

We could expect that matter is stepwise "designed" and "crystallising" through the dimension chain and presuming these steps as angle steps of halvings we get a very narrow sector at last which could represent visible matter, - or rather the light waves from it.

In the last step we get the rest angle of 11,25°: that is about 3 % of the circle:



Cf. the figure from file Forces - MEGA-fields:



The foregoing steps as the "empty space" whose "weight" not should be neglected?

Now, 2005, new rumours tell that
1) the energy of “vacant space” is recognised and
2) “vacant space” energy should make up 73%,
3) "dark matter" correspond to 23 %,
4) visible matter to 4 %.

4	x	3	:	10	x	8	E	=	80
3	x	2	:	8	x	6	E	=	48
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E-number products = sum 160.
Assuming that step 3-2 is doubled (that of mass to matter), we get the sum
208. (~$3^{2/3}$ x100).

80 + 48 + 24 = 152 = **73 %** of 208
+ 8 = ~ **4 %** (3,84) of 208
+ 48 = **23 %** of 208.

Motivations for this doubled step 3-2 - or 2 - 3 ? The double direction in the cgain?
5 → 4 → 3 ↔ 2 ← 1 ← 0/00. Double entry bookkeeping?

[Another way to find such percentage:
(5 x 3 x 1)/ (4 x 2) = number "w" , (odd through even d-degrees of a dimension chain).
W = 15/8. /\ = inversion.

√w, /\ = 73 %
√10w, /\ = 23 %
<——— difference ~ 4 %
^{4}√100w, /\ = 27 %]

6. Can new matter be created in Universe?

One can assume that the 4-dimensional vector fields has been used up where big masses exist and gravitation as 2-dimensional roots out of the fields has been created between the masses. The requirements for new matter should then be exhausted in this neighbourhood.. In solar systems, galaxies, galaxy crowds. - However, it is said that one has not been able to find gravitation between galaxy crowds. why It perhaps could remain some suitable vector fields there for inversion?

7. Vacant Space and Future:
The vacant space can be compared with the inward direction of Time, with the Future as directed inwards towards the Present. Vacant space as 00-pole be the analogue in Space to the inward direction of Time. Both can be seen as "causes from outwards" - to an effect, to processes, to movements. It´s not least thanks to the empty space that bodies can move!

