APPENDIX

More about numbers
with more or less wild elaborations

Mass number maxima:
238
206-209

Z-N maxima:
82-83
92
126
146

Sums of Z in the periodic system

Sums of mass numbers in the periodic system

What decides the maximum mass of atoms in Nature? The common answer is of course the reach of the strong nuclear force, but why just this reach, to 209 or 238 u?
Another aspect could be the possibility for the nuclei to “breath empty space”, their dependence on this “negative energy” of Space as nourishment to uphold their existence as units. (Cf. interpretation of light waves in part *Physics*.)

A third assumption, behind these papers, is that numbers count. At bottom founded in the numbers of dimensions. The numbers 238 - or 209 for instance don’t seem to be any numbers whatsoever.

If some or any of the derivations of numbers in these operations should have physical sense, revealing some unknown underlying “laws”, the total disregard of 10-powers and displacements in the decimal system in many of them need of course some suggested explanation.
Here only two remarks. Number 10 is the sum of poles from the 5th degree in dimension degree (d-degree) 4 in our model, and displacements could eventually be regarded as referring to different levels of developing dimension chains.
One association is the repetition of the same patterns in decreasing sizes within the field of chaos research.

<u>12. 238 - more about the mass number of Uranium:</u>

a. The Golden Section:

The division of U 238 in N- and Z-numbers follows roughly the golden section:

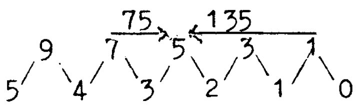
The golden section (gs): $\sqrt{5/4} + ½ = 1,618...$:

$$\mathbf{238}/gs = \mathbf{147},1. \approx N + 1$$
$$\rightarrow 147,1 / gs = \mathbf{90},9. \approx Z - 1. \quad \text{Sum } 238.$$

(Compare 238 x gs ≈ 385, a number among amino acids, see files about the genetic code: *385 x 2*.)

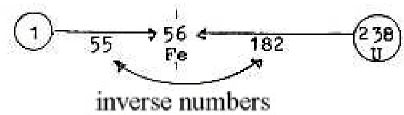
b. Number reading in the superposed odd-figure chain:

Fig.12-1:



$$7,5^2 \;+\; 13,5^2 \;=\; \underline{238,5}$$
$$\downarrow \qquad\qquad \downarrow$$
$$\approx 56,25 \quad \approx 182,25$$

Fig. 12-2:
The number division divides the series 1 --238 at the border between fusion and fission, at energy minimum. Fe, 56 A, max. stability.



Sum of numbers 75 + 135 = 210. (210 inverted = <u>2 x 238,</u>095. x 10^{-5}.)

[Compare numbers 74 and 135 as inversions, 74 /\ 135..., sum 209 and these numbers in the genetic code: 135 = nucleic acid A, and 74 the mass number of B-chains of amino acids, transported by base A. Also: 75 /\ 133..., (3/4 - 4/3, x 10^x), mass numbers of amino acids Gly and Asp, elementary building stones for bases purines and pyrimidines of the genetic code.]

c. Elementary particles π^+ and μ in a relation of multiplication:

$$\sqrt{\underset{\pi^+}{273} \times \underset{\mu.}{207}} = \sqrt{\pi^+/e \quad x \quad \mu/e} = 237,72. \approx \mathbf{238}.$$

The “2-figure chain”, wavy reading:

```
   9     7     5     3     1
 /   \ /   \ /   \ /   \ /   \
5     4     3     2     1     0
```

59+94+47+73 = <u>273</u>
47+73+35+52 = <u>207</u>

d. 4th root out of 2^{5}. = <u>238</u>. x10^{-2} (237,84).

e. lg 237,58 = 2,3758 ... Difference to 2,38 ≈ 1/238.

(^{10}lg 240 = <u>238</u>. x10^{-2} (238,02 x 10^{-2}).

f. The π-number 3,14...:

4/3 π, /\ = <u>238</u>,73. x 10^{-3}
= inversion of a volume with radius r = 0,1.

[C f. 3/4 π = 235,6. x 10^{-2} (U 235).]

g. Triplet numbers inwards: 012 + 123 + 234 + 345 = 714

238 = 1/ 3 of 714.

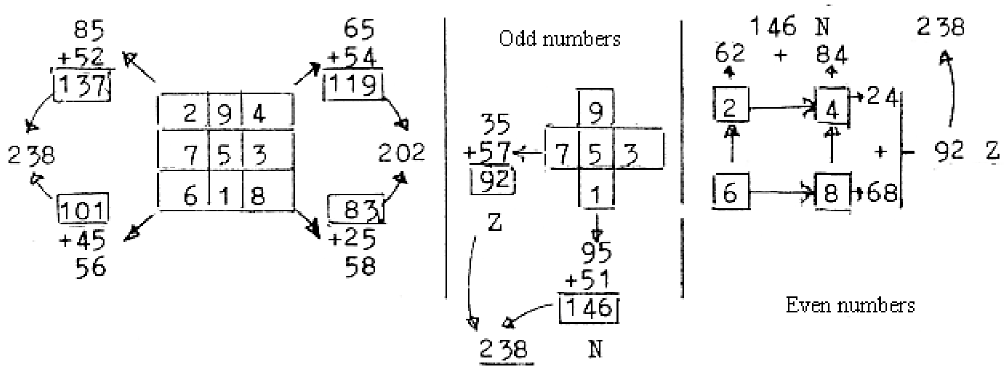
h. Roots of some dimension numbers:

5 4 3 2 1 →	54321					
		>56789	√ 56789	=	238,3	~ A
← 8 6 4 2	← 2468		→ √ 8642	=	92,96	~ Z (+1)

i. Magic squares:

Figures 1-9 arranged to give the sum of 15 in each direction, horizontally, vertically and diagonally, (15 = the sum of a 5-4-3-2-1-chain):

Fig. 12-3:



Z/N-numbers of Uranium in perpendicular number sums

Note the division of 92 Z in odd 2-figure numbers 35 + 57, circa a partition 2/3: compare the division of Uranium into Sr (38 Z) and Ba 56 Z.
Note too the orthogonal relation between N and Z and the eventual physical sense ! ?

j. The quotient between triplet numbers in the dimension chain squared in relation to 2 π:

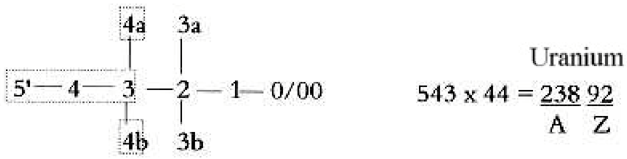
$210 \ / \ 543 = 38{,}674. \longrightarrow x^2, \quad \div 2\pi = \mathbf{238}{,}045. \times 10^{-4}$

k. The natural logarithm and number 5-4-3:

$\ln (2 \times 5{,}43), \times 10^2 = 238{,}5.$

l. "A-Z"-numbers from a multiplication of steps 5-4-3 times poles of d-degree 3 read as 44:

Fig.12-4:

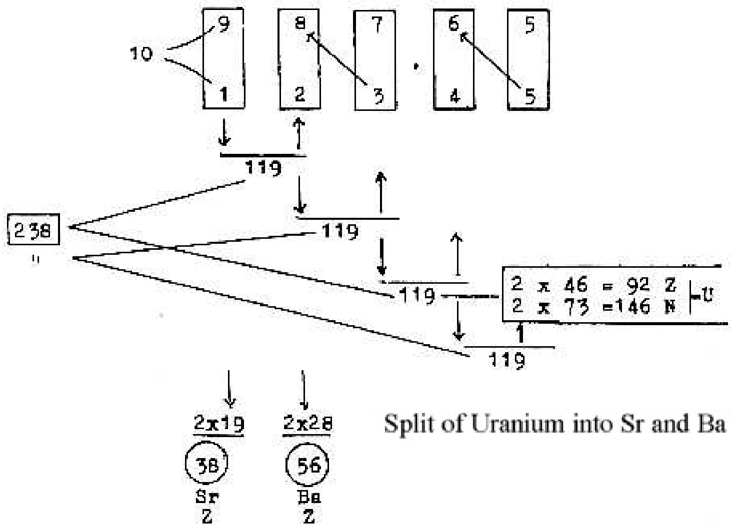


543 x 44 = 238 92
A Z Uranium

m. Polarizations of number 10 (as sum of poles in d-degree 4):

Fig. 12-5:

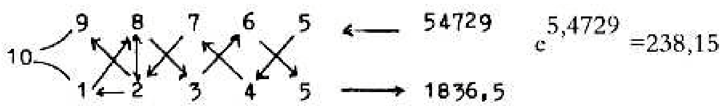
m1)



[73 + 64 =
= 137, A-number Ba.
91 = A-number of one unstable isotope Sr.]

m2). Number 10 polarized (with intervals 8 - 6 - 4 -2 - 0):

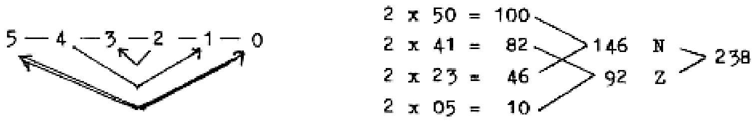
Fig. 12-6:



$e^{5{,}4729} = \mathbf{238}{,}15.$ $\quad$ 1836,5 ≈ quotient p/e.

n. Number readings in the loop version of the dimension model:

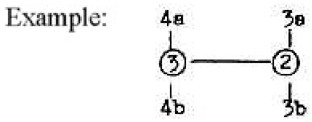
Fig. 12-7, 8:



Cf. 182 - 56, *fig. 12-1.*

o. Dimension degrees and sum of poles:

Fig. 12-9:



Number reading ***3*8** **26**

$[1 / (1/38 + 1/26)]^2$ = **238,3** ≈ A-number of U

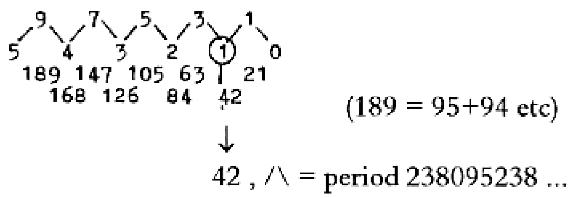
Cf. 1 / (1/26 - 1/38) = 82,3. ~ Z-number of Pb.

p. The "2-figure-chain" again: number readings downwards,

e.g. 95+94 = 189, 31 + 11 = 42 etc.

:

Fig. 12-10:



42 , /\ = period <u>238</u>095238 ...

With factor 21 in all the numbers, their inversions give the same period times the number series for steps in the chain: 4,5 - 4 - 3,5 - 3 - 2,5 - 2 - 1,5 - 1 - 0,5.

Ex. 147 /\ , x 3,5 = 238,095238... x 10^{-4}.

q. Inversions of "step numbers" read in the 2^x-chain (x = 5 - 0):

One hypothesis in the model is that the 2^x-series may be regarded as operating inwards in the dimension chain, i.e. elementary division through the polarizing forces:

Fig. 12-11:

5 4 3 2 1 0/00

32 — 16 — 8 <— 4 —> 2 <— 1: = Series 2^x

48 42 12 (simple number reading)

42 /\ = 238. x 10^{-4}

48 /\ = 208. x 10^{-4} 48,48 ... /\ = 206. x 10^{-4}.

12 /\ = 83,3. x 10^{-3}

24 /\ = 41,7. x 10^{-3} – 145,8. ≈ **146**. N-number ^{238}U

48 /\ = 20,8 x 10^{-3}

13. 209 (208-206) as mass maximum of “stable” isotopes:

a. The quotient in strength between the nuclear force and the electromagnetic force is said to be about 137 (*Gamow)*:

3,2 /2,1 ≈ quotient N/Z at Z-number 82~83 Z. (Pb 82, Bi 83 Z)

$\underline{3{,}2 / 2{,}1}$ x $\underline{137}$ = N + Z = 208,72 ≈ 209.(Bi)

b. The $2x^2$-chain, inversion of numbers::

$\underline{50 \quad 32} \quad \underline{18 \quad 8 \quad 2 \quad 0}$

82 28

/\ /\

= $\underline{1{,}2195. \quad + \quad 3{,}571. \quad x\ 10^{-2}}$

Σ = 4,7909... x 10^{-2}

/\

$\underline{208{,}72}$. x10^{-1}

These two numbers inverted and added, the sum re-inverted, x 10, gives the number ≈ 209.

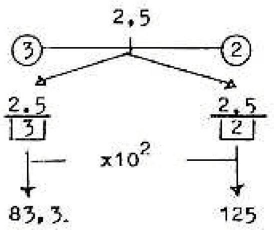
c. ln 8, x 10^2 = 208. (207,94)

8 = 2 x 2^2 at d-degree 2 in the $2x^2$-chain.

d. 209 as number out of the middle of the dimension chain:

½ x 5, in step 3 — 2: 2,5 divided with the d-degree numbers:

Fig. 13-1:



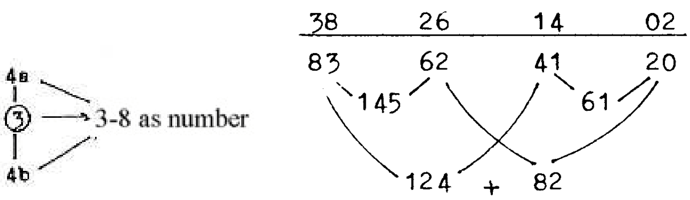
Z-N-numbers of 208 A, Pb, (also one unstable isotope of Bi)

83 -1, **125** + 1: Pb 208 Displacement of 1 unit.

e. Dimension degrees and their pole sums:

Fig. 13-2, 3:

3 2 1 0/00

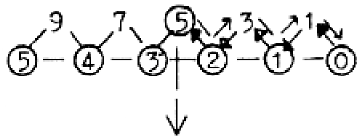


Turned numbers:

N- + Z-numbers for Pb 206

(145 and 61 = A- and Z-numbers for Pm which lacks a stable isotope.)

f. 2-figure-readings in the elementary chain with superposed odd-figure chain:
Fig. 13-4.



"inwards": 25 + 32 + 13 + 11 + 01 = 82 ↗ Z-1

> 209

"outwards" 52 + 23 + 31 + 11 + 10 = 127 ↘ N+1

g. Triplets of the dimension chain with exponent 2/3:
(Cf. the "exponent series" 5-4-3-2-1 with the same exponent in pdf-files about *The genetic code*.)

$543^{2/3}$ = 66,558.

> 123,70. ≈ 124 124 N

$432^{2/3}$ = 57,146.

> 206 Pb

$321^{2/3}$ = 46,882.

> 82,21. ≈ 82 82 Z

$210^{2/3}$ = 35,330.

h. 2^x-chain as 4 "triplets" (≈ as the period of 5/7: 0,7-14-28-5<u>7</u>...):

$2^5 + 2^4 + 2^3$ = 56 <-------
$2^4 + 2^3 + 2^2$ = 28
$2^3 + 2^2 + 2^1$ = 14 - 42 - 63
$2^2 + 2^1 + 2^0$ = 7 <-------

2 x 42 = 84, Z + 1
2 x 63 = 126, N - 210

i. Dimension chain as quotient steps:

5 .÷ 4 ÷ 3 ÷ 2 ÷ 1, x 10^3 = <u>208,</u>33.

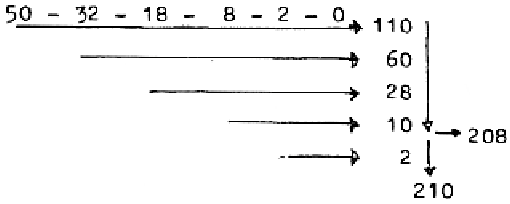
j. Most elementary interpretation of 209 = 210, -1 ,
the triplet 210 in the dimension chain: "poles" 209 (Bi) <—> 1 (H).

Dimension chain: 5 4 3 - <u>2 1 0</u>
(Elements assumed developed in step 2--1.)

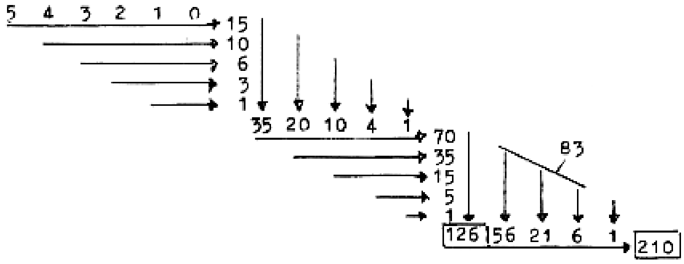
Note: 21 x 12, x 1/2 = 126 = N-number at A 209-210
N = 3/5 of 210 = 126
Z ≈ 2/5 = 84. (-1 = 83)

k. Cumulative sums in different number series:

k1 In the $2x^2$-chain in one step:
Fig.13-5:



k2. Cumulative summations in the elementary chain 5-4-3-2-1-0 :
Fig 13-6:



Compare 209,
divided 126,
N-number, + 83,
Z-number.

k3 The elementary number chain: Cumulative additions in another way:

0 - 1 - 2 - 3 - 4 - 5
→ → → → →
1 3 6 10 15
→ → → → →
1 4 10 20 35
→ → → → →
1 5 15 35 70
→ → → → →
1 6 21 56 126
Σ 1 **83** **126**
Z N Bi

k4 The 2^x-series with cumulative additions:

1 - 2 - 4 - 8 - 16 - 32
→ → → → →
63 = 1/2 x 126 3 7 15 31 63
119 = 1/2 x 238 → → → →
10 25 56 119
→ → →
35 91 210
126 <-|->210
≈ N 84

l. 209 +/- 1, as stimulated by addition of units to Uranium 238:

238 + one alpha = 242, /\ x ½ x 10^5 = 206,6. Pb 206.

238 /\ x 1/2, x10^5 = 210. (210,08)

239 /\ x 1/2, x10^5 = 209. (209,20) |-83-84 Z

240 /\ x 1/2. x10^5 = 208. (208,33) |-82 Z

m. 208 as sums of rows in the number pyramid on orbitals:

Fig. 13-7:

```
 f          d          p          s
14 \      / 10 \     / 6 \      / 2      = 32 |- 80     +2 = 82 = Z
     24          16         8            = 48 |
        \      /    \     /              = 64 |                      > 208
          40          24                 = 64 |- 128    -2 = 126 = N
             \      /
               64
```

n. ^{10}**lg 1-2-3 = $\underline{209}$ (208,99) x10^{-2}**

(N = 126: lg. 126 ≈ 210. x 10^{-2})

o. Log-number of the Golden Section:

$^{10}\log [\ \sqrt{5/4},\ + 1/2\ ]\ \times\ 10^{3} = 209.$ (208,9876.)

p. Square root out of 10 with exponent $10^{2/3}$:

$\sqrt{10^{10^{2/3}}} = \underline{209}.$ (209,312)

q. Exponent 2/3: $3^{2/3} \times 10^{2} = 208.$

Numbers 208-209 appearing in the distribution of codons in the genetic code.
(208 read in number-base system 8 = 210.)

14. Z-maxima, numbers around 82-83:

Earlier derivations of the numbers,
see 209: d, h, f, k(k2, k3), l, and 209: e, f, g, j.

a. Number readings in the $2x^2$-series:

Sum of first two numbers in the chain = 82:

$$\underbrace{50 - 32}_{82} - \underbrace{18 - \underbrace{8 - 2 - 0}_{10}}_{28}$$

$$82 \longleftarrow + 10 = 92\ Z$$

82, 28 are among the so called "magic numbers" in the periodic system.

$$\underbrace{\underbrace{50 - 32}_{82} - 18 - 8 - \underbrace{2}_{2}}_{84} - 0$$

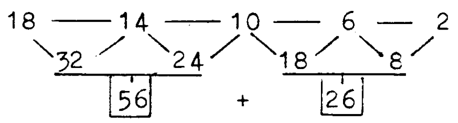
84 x 5/2 = 210, element 84 Z.
84 x 3/2 = 126 = N-maximum l--83 Z.

b. Summation of orbital numbers as an underlying or superposed level:

Repeating the figure from Part I: 9b about Fe and the energy dale:
Whole sum 82 as a Z-number.

.

Fig. 14-1:



Fe 26 Z, mass number 56 A

56 + 26 = 82

c. $2x^2$-chain with intervals as orbitals:

50 --|-- 32 --|-- 18 --|-- 8 --|--2 --|-- 0
(18) 14 10 8 2

Step 3-2: 18 --|---8
10

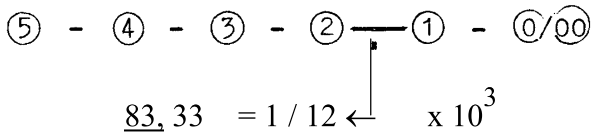
$\sqrt{10}$, x (18 + 8) = $\underline{82}$,2

d. Step 3-2 read as number 3,2:

3,2 x (18 + 8) = $\underline{83}$,2

e. 83 Z ≈ the inversion of d-degree step 1—2:

(Elements supposed to be developed in the step 2-1 of a level chain.)
Fig. 14-2:



83, 33 = 1 / 12 ← x 10^3

1/21 + 1/12 = 1/ 7,636.
↓
≈ mean value for bond energy per nucleon in the atomic nucleus - in MeV !

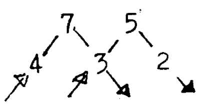
f. Dimension step numbers:

5 - 4 - 3 - 2 - 1 - 0
→ ←
43 123
\ /
166 ---> x 1/2 = 83

Sum of 1-83 Z = 21 x 166. (Elements in f-orbitals 21 x 43 Z, element in s-p-d-orbitals 21 x 123.

g. $e^{543/123}$ = 82,65 ≈ 83.

h. Reading of 2-figure numbers in the elementary chain with superposed odd-figure chain:
Fig. 14-3:



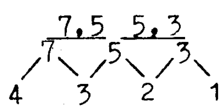
47 + 35		73 + 52	
82	+	125	= 207A, Pb
Z		N	

Cf. the μ-lepton μ/e = 207 = 47 + 73 + 35 + 52, the middle at d-degree 3.
The π-meson π/e = 273 = 59 + 94 + 47 + 43, the middle at d-degree 4.
(Sum 480, /\ 208,3. x 10^{-5})

i. Squares of step-numbers in superposed number chain:
Fig. 14-4:

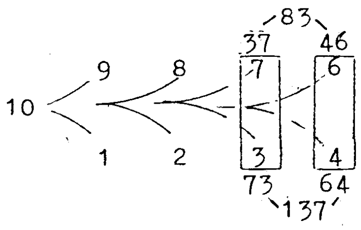
$7,5^2 + 5,3^2$ = **56**,25 + **28**,09 = 84,34 ≈ 84.

Also a division around the "energy dale".



j. Polarization of number 10 as the sum of poles in d-degree 4:

Fig. 14-5:



Intervals 8-6-4-2 = sum of poles in d-degrees 3-2-1-0.

137, the relation in strength between the nuclear force and the electromagnetic one. (*Gamow.)*

Z-maximum 92:

k. Inversions (from Part I):

543 /\ x 1/2 x 10^5 = <u>92</u>. (92,08) Uranium Z

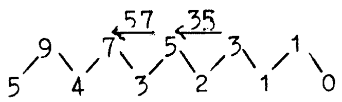
(210 /\ x 1/2 x 10^5 = 238.) Uranium A

l. The natural logarithm *e* a number in step 3 -- 2, 5 - e = 2,28...(from Part I):

$$\frac{210}{5-e} = \underline{92},04. \qquad \frac{543}{5-e} = 238$$

m. Superposed odd-figure-chain:

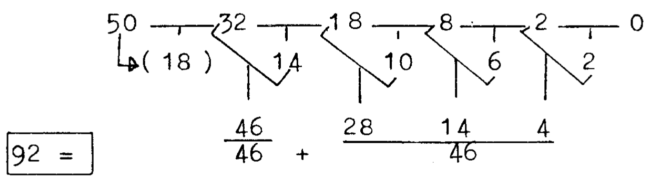
Fig. 14-6:



35 + 57 = 92
(13 + 79 = 92)

n. From Part I, figure 09-4:

Fig. 14-7:



See also earlier operations: 238: a, h, i, n.

<u>15. N-numbers 126 - 146 as maxima at 83 and 92 Z:</u>

Earlier operations:
see 238: a, i, m, n, q; 209: d, e, f, g, h, j, k (k2. k3, k4), m.

1. The elementary number chain with exponent 2/3:

$5^{2/3}$ x 100 ≈ 292 = 2 x <u>146</u>, maximal N-number, Uranium.

$4^{2/3}$ x 100 ≈ 252 = 2 x <u>126</u>, N-number around max. "stable" isotopes 82-83 Z.

(Cf. numbers for amino acids in *The Genetic Code*.)

2. Higher and lower d-degrees
maintains together the potential in the intermediate d-degree according to main postulates in the dimension model.

5 --> 4 <-- 3	Numbers:	5-3		
4 --> 3 <-- 2		4-2	- <u>126</u>	
3 --> 2 <-- 1		3-1		- <u>146</u>
2 --> 1 <-- 0		2-0		

3. Sum of the 2^x-chain x 2 from d-degree 0//(00) inwards:

Sum [2^0 ---- 2^5] = 63, x 2 = <u>126</u>

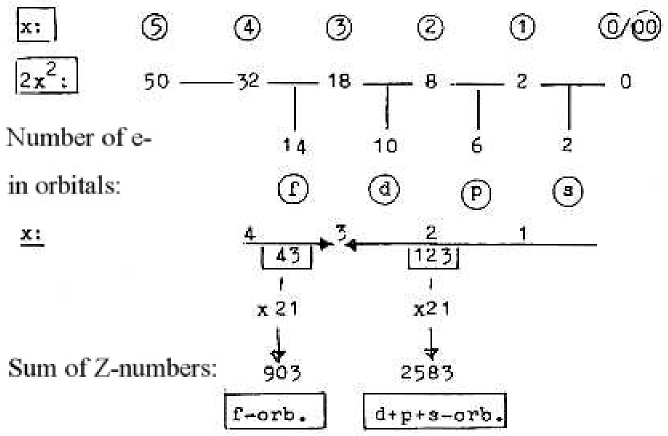
4. 9 times number steps in the loop model of 5 polarized 4 / 1 and 3 / 2:

9 x <u>14</u> = <u>126</u>	———>	- 1	=	125	- Pb 207 A
	⊢—> 81 -->	+ 1	=	82	
<u>9 x 23 = 207</u>					

16. 3486 - the sum of Z-numbers 1-83 Z:

a. The Z-sum divided on elements in the different orbitals:

Fig. 16-1:



Hence, the sums are proportional to d-degree steps read as numbers, if s + p + d are added.

21 x 43 = 903
21 x 123 = 2583 |- 3486   5 - 4 - 3 - <u>2 - 1</u> - 0

b. Z-sum 3486, distribution on whole shells and orbitals:

	s	p	d	f				
K	3				=	3		
L	7	45			=	52		- 3486
M	23	93	255		=	371	- 3129	
N	39	201	435	903	=	1578		
O	75	309	741		=	1125		
P	111	246			=	357	- 357	
Σ	258	894	1431	903				

s   p   d   f
2325 (p + d)
1161 (s + f)

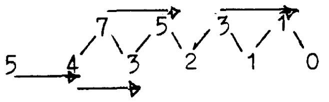
Number of orbitals = 15, the sum of an elementary dimension chain 5+4+3+2+1; (the 15th only half).

c. Inversion of factor 43 and division ≈ 1/3 --- 2/3.

Factor 43 /\ x 10^5 = <u>2325</u>,6. ~ d + p elements

2/3 = 2324 ≈ d + p ≈ 54 x 43, (+ 3)
3486 ≈ <
1/3 = 1162 ≈ f + s ≈ 54 x 43 x 1/2

Fig. 16-2:



75 x 31 = 2325, d + p

54 x 43 = 2322,   x 1/2 = 1161 = s + f

d. [54,3 x 32,1] x   2 = 3486, 06.

e. 3486 Z ≈ 4 / 7   x sum 1-110 Z (6105) ,

4/7 x 6105 = 3488,6

f. s-orbital, Z-sum of elements = 258:

258 ≈ 1/10 of s + p +d 2583

g. The quotient 543 / 210 = 258,57. x 10^{-2}.

The sum of the s-orbital elements = 258.

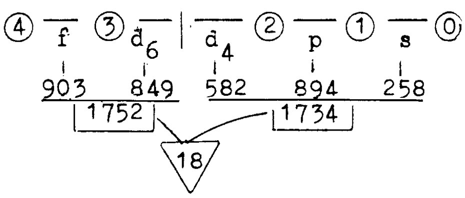
The quotient A/Z for U: 238/92 = 258,7.

Inversion: 258,57 /\ = 386,7. x 10^{x} ≈ 387.
387 = 9 x 43
258 = 6 x 43.........a 3/2-relation

9 x 387 = 3483 = the whole sum minus 3.
6 x 387 = 9 x 258 = 2322, x 1/2 = 1161 = s + f orbital elements.
(Cf. in biochemistry Z-relations NADPH+H and ATP: NAP(H) 386 (+1) — ATP 258: inverse numbers.)

h. Division of the total sum in the middle step 3 —2:
here between periods d-6, (i. g. Fe 26 Z) and d7
Fig. 16-3:

Z:



Numbers 1 + 3 + 5 = 903 + 582 + 258 = 1743 = 3 x 581.
Numbers 2 + 4 = 849 + 894 = 1743

i. Z-sums as squares (cf. mass sums below):

s + p + d.= 50^2, + element 83 Z,   f = 30^2 + 3.

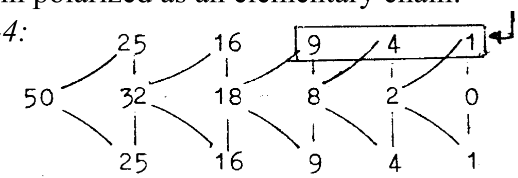
j. Number 1-4-9:

Whole shells K-L-M-N-O =3129 = 21 x 149 Rest 21 x ($4^2 + 1^2$) = 357.

p-orbital in 2-1-step = 894 = 6 x 149.

$2x^2$-chain polarized as an elementary chain:

Fig. 16-4:



1-4-9 as poles in d-degrees
0/00, 1, 2

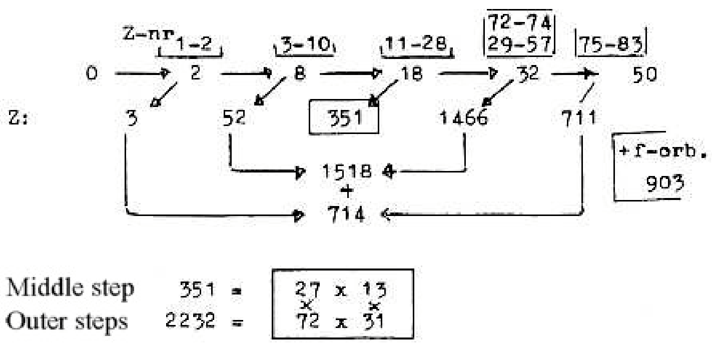
A note:. Mirrored d-orbital and number 149:

⑤ — ④ — ③ — ② — ① — ⓪

f	d	p	s
903	1431	894	258
	1341	894	
	↓	↓	
	447 x 3	2 x 447	
	149 x 9	6 x 149	

k. Test with dividing number of elements 1-83 Z in accordance with the $2x^2$-chain, without the f-orbital:

Fig. 16-5:



Two other Z-sums 3300, -1, 3570:

I. Sum 3300, -1 = 1 - 82 Z without elements Tc 43 and Pm 61
(not found as stable isotopes in Nature) = 80 elements:

82 Z: end station for the disintegration series of U 238, U 235 and Th 232.

2200, -1 = p + d-orbitals ~ 2/3
3300, -1: <
1100 = s + f-orbitals ~ 1/3

"Quark" partition: 2/3 - 1/3 as of the sum 3486 above.
Partition of number of elements: —> 55/25.

Distribution of the Z-sum on shells and orbitals without Tc, Pm, with and without Bi 83 Z:

			- Tc 43	- Pm 61			
	s	p	d	f			
K	3				= 3	55	55^2
L	7	45			= 52		
M	23	93	255		= 371		
N	39	201	392	842	= 1474		
O	75	309	741		= 1125		
p	111	246 (163)			= 357	357 (274)	
Sum	258	894 (811)	1388	842	= 3382	(3300 -1)	

Without Tc 43 Z and Pm 61 Z = 3486 - 104 Z.
Numbers within brackets = without Bi 83 Z.

- 5 shells $= 55^2$, the square of K- plus L-shells.

- With Bi 83 Z excluded the sum of 80 elements becomes 3300 -1:
  With number 83 "wrongly" deduced from the sum of first 5 shells one gets the division of 3300 -1:

  P-shell + f-orbital: <u>1200, -1</u>. | (Bi 83 Z included)
  K+L+M+N+O-shells, s + p + d-orbitals: <u>2100</u>. | (Bi 83 Z excluded)
  Quotient 4/7

  (P-shell 357, Bi 83 Z included, + f1-orbital 842 = 1200 -1.
  K+L+M+N+O-shells = 3025, - f_1 = 2183, - Bi 83 Z in a p-orbital = 2100.)

  (P- and Q-shells are in Part I interpreted as translations of the not realized highest orbital x = 18 or the equivalence.)

m. Sum Z 3570 = <u>1-84 Z</u>:

3570 = sum of triplets in inward direction in the dimension chain =
= 012 + 345, x 10 .

28

3570 = 1--84 Z: $2x^2$-kedjan: 50 - 32 - 18 - 8 - 2 - 0

82 2

|______84______|

- 3570 = 0-1-2 + 3-4-5, x 10: <
  - 1-2 x 10 = sum of inert gases
  - 3-4-5 x 10 = the other elements

- 3570 is the inversion of number 28:
  3570,/\ = 28. x 10^{-5} (28,3571,4.) (28 x 3 = 84)

  Group 0, the inert gases = Z: 2, 10, 18, 36, 54 = Σ 5! =120.

  Rest: 3450

  1350 <——> 2100

  903 + 447 groups

  ↓ ↓ ↓

  f-orb. | group 8: Fe-Co-Ni etc. | 1--7 a, b

  = ½ x 894 (cf. 16.b)

  5 - 4 - 3 ←—— 2 - 1 - 0 →

  345 | 210

  diff.
  135

(P-shell elements in s + p-orbitals in the sum 1-83 Z = 357.= 012 + 345.)

A note: Number of 92 elements without Tc and Pm,
divided on the orbitals = 30 - 30 - 30:

92 elements:	s + f	d	p
	s 14		
	f_1 14		
	f_2 3		
	31	31	30
	- Pm	- Tc	
	= 30	30	30

Cf. Sum of poles in the dimension chain = 30 = 10 + 8 + 6 + 4 + 2.

17. Mass numbers (A) for the element series:

Values caught from a Table on Physics: mean value of isotopes with regard to their occurrence in nature. Numbers abbreviated.

a.

		Elements	A-numbers			
		1 - 10 Z:	113		↓ 113	
		11 - 20 Z:	320		↓ 433	
		21 - 30 Z:	553		↓ 986	
		31 - 40 Z:	813	- 1800.-1	↓ 1800, -1	
3486	4805-	41 - 50 Z:	1050		↓ 2849	
= Z	~ N	51 - 60 Z:	1342	- 2392	↓ 4191	- 4191
		61 - 70 Z:	1600	- 1600	↓ 5791	- 4100
		71 - 80 Z:	1880	- 2500	↓ 7671	
		81 - 83 Z:	620		↓ 8291	
						8291
		- 84 Z:	209		8500	
		85 - 86 Z:	432	- 2018	8932	
		87 - 92 Z:	1377		10309	

a1). Mean value per element 1-83 Z = ≈ 100. (8291 / 83)
In the $2x^2$-chain corresponding to d-degrees 5 + 4 + 3 = 50 + 32 + 18.

1-92 Z: mean value 10309 / 92 ≈ 112.

a2) Divisions as of N-Z of sum 8291:

"Surrounding" groups, 3 first and last 2, = 1-30 Z, +70-83 Z:
43 elements = 3486 A, equivalent with total Z-sum 1-83 Z.
"Inner" groups = 30-70 Z:
40 elements , = 4805 A, equivalent with the total N-sum.

a3). Square numbers in the distribution of mass as connected with steps 5 - 4 - 3:

			Number of elements	A-sums
50^2	83-71	Z,	13	2500
40^2	70-61	Z,	10	1600
40 x 30, x 2, -8	61-40	Z	20	2400 - 8
30^2, x 2, -1	40- 1	Z,	40	1800 - 1

b. Division of Z- and A-sums of 1-83 Z in quotients:
(*Repeated from part I.)*

5 - 4 - 3 - 2 - 1 - 0: Middle step numbers 3 — 2.
Reading the step number in opposite directions as 32 — 23:

b1) A-number sum 1-83 Z as calculated to 8291 A:

	32/55=	4824.—> -19	=	4805 = N-sum	
8291 <		↓			$19 = 3^3$ <—> 2^3
	23/55=	3467.—> +19	=	3486 = Z sum	

b2) A-number sum 1-85 Z: 8500:

	32/55=	4945,---> - 15	=	4930 = N-sum
8500 <		↓- 15		
	23/55=	3555,.---> +15	=	3570 = Z-sum

b3) 3/2-division of the A-sum 8291 A:

	3/5 =	4975, —> -11	=	4964 = A-sum for 57 - 83 Z
8291 <		↓--11		
	2/5 =	3316, —>+11	=	3327 = A-sum for 1 - 56 Z.

3/2-division marks a border at Ba/La, 56 / 57 Z, after 5 shells, middle number in the $2x^2$-chain.

c. Mass distribution on orbitals of sum 8291:

5 — 4 — 3 — 2 — 1 — 0

f d p s

——> <————

2200 6091

50 x <u>43</u> <u>123</u> x 50

+50 -59 Difference from A-sum = 9.

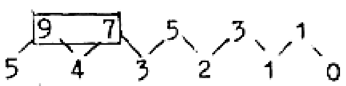
Cf. Z-numbers: f_l = 21 x 43 —> <— 123 x 21 = s + p + d

d. Mass as volumes connected with the π-number (?):

4 x π^2 x triplet 210 of the dimension chain = 8290,47

e. Mass sum of elements 1 - 92 Z = 10309 A:

Fig.17-1:

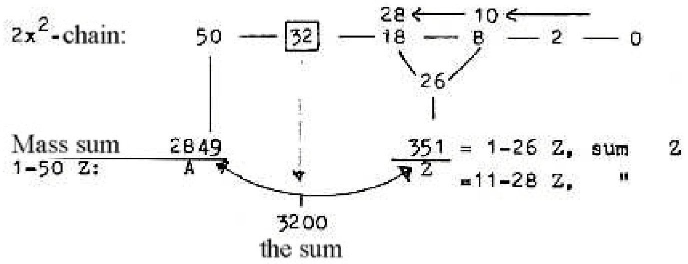


97: first 2-figure number in the superposed chain.

97 /\ = <u>10309</u>,3. $x10^{-6}$ (Inverse number of Tc 's 97 A:)

f. Mass sum 1- 50 Z = 2849, a special inverse relation A --- Z:

Number 32 in d-degree 4, x 100, divided in numbers related as inversions:
Fig. 17-2:



2849 /\ = 351. x 10^{-6}. 351 /\ 2849. x 10^{-6}

The rest, elements 51-83 Z, mass sum = **5442**. 5442 - 2849 = 2593.

. The elementary chain with exponent 2/3 x 100: (Cf. about *The genetic Code.)*

$5^{2/3}$	$4^{2/3}$	$3^{2/3}$	$2^{2/3}$	$1^{2/3}$	x 100
292.	252.	208.	159.	100	
\	/		\	/	

544 <———— ^ ————> **259**

x 10 **285**

	5440	2850	
	+2	-1	
=	**5442**	**2849**	= 8291.
	51-83 Z	1-50 Z	→ A-number sums

292 + 252 + 208 = 752, - 259 = 493, x 2 = 986 A = A-number sum 1-30 Z
986 ≈ π^2 ($3{,}14^2$) x 10^2

g. A-number sums for groups with oxidation values +/- 1, +/- 2, +/- 3
surrounding the 0-group (inert gases):

	-3	-2	-1	\0 /	+1	+2	+3	
C -/+4	N	O	F	Ne	Na	Mg	Al	Si +/-4
	P	S	Cl	Ar	K	Ca	Sc	
	As	Se	Br	Kr	Rb	Sr	Y	
	Sb	Te	I	Xe	Cs	Ba	La	
				279				
			261		280			
				541				
		255				289		
				544				
	242						300	
				542				A-number sums around number 543.

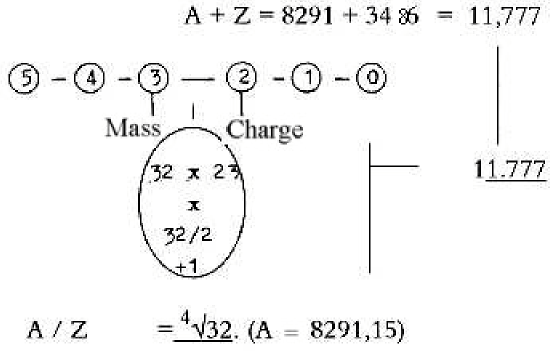
Sum including the 0-group ≈ 3,5 x 544,6. /\→ = 1836,3...≈ the p/e-quotient x 10^{-6}

h. Sum A + Z for elements 1 - 83 Z:

(Such a sum could be interpreted as number of p + n ,+ e.)

A + Z = 8291 + 3496 = $\underline{11{,}777 = 110^2 - 18^2 \quad (+1)}$

Fig. 17-3:



$2x^2$-chain: 50 —— 32 - 18 - 8 - 2 - 0 : Sum 110, --> 110^2

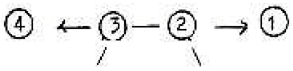
18

= "5th orbital, the lacking one 18. ————————> -18^2

- Cf. 110 - 18 = 92, max Z-number in Nature.)

- A / Z -quotient 8291 / 3486 ≈ $\underline{\sqrt[4]{32}}$.(A-sum then 8291,15)

i. Mass and Charge as properties in this model assumed related as d-degree 3 to 2:
Fig. 17-4:



1-83 Z:	<u>8291</u> A	Z <u>3486</u>	
	÷ 3	÷ 2	
	÷ 34	÷ 21	(step numbers inwards - outwards)
	↓	↓	
=	81,3	83	
1~92 Z:	<u>10309</u> A	Z <u>4278</u>	
	÷ 3	÷ 2	
	÷ 34	÷ 21	
	↓	↓	
=	101,07	101,86	

The operations with numbers of d-degrees and counterdirected steps lead to approximately the same results - as if A- and Z-sums were built on numbers 82 and 100 in the $2x^2$-chain (?).

END