ARTICLE 21

Electron Probability: PUB C_{PEP} I (Probability Union Between C_{PEP}) Necessary NIN relationships

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ABSTRACT

This is 21st article of 24 dedicated to atomic model based on Victoria equation (Articles index is at end).In [9], P44 Necessary NIN Relationships is introduced with $C_{POTI-AL}$ division as line to be deepened and implies that Electronic Systems values [6-8] follows trends along nuclear charge. This article is the first part for PUB C_{PEP} treatment and considers C_{PEP} breakdown whose Advance presents atomicity and sensitivity to IE variations (P75)

From P76 to P78 is the section dedicated to C_{PEP} of different BES that, considered correlatively, form groups and linear trends.

KEYWORDS

OES, BES, Necessary NIN relationships, Tete Triad Quartets and Duo, PUB C_{PEP}, Victoria Equation.

INTRODUCTION

A extern electronic extreme (EE_A) is indicated with a suffix (r_A, H_A or c_A), B intern with b suffix (r_B, H_B or c_B) and i suffix is used to both electronic extremes (EE_i). Suffixes B (Born) and O (Origin) appear from BES and OES concepts [6]. All abbreviations are compiled, in conjunction with those included in [6,9], at article end.

This article is [9] continuation where Necessary NIN relationships is introduced as solution to energetic paradox that allows coupling of any BES energy to OES. But, instead of being centred in C_{POTI} division, develops another probability factor (C_{PEP}) applied to electron of electronics extremes. Victoria Equation, electronic extremes and Probability are explained from [1] to [9].

P75 C_{PEP} advance with Z increase

C_{PEP} between two consecutive Electronic Systems has steady trend as Atomic Number (Z) increases. For example, 2s and $2s^2$ lobes haves constant C_{PEP} between two Electronic Systems in the same atom (P42 C_{PEP} as adapted Probability between lobes pair [6]) that must now meet a relationship from the first atom that has both Electronic Systems (2s and $2s^2$), which is in this case Beryllium atom, to any atom of greater Z.

Y lobe C_{PEP} calculated in terms of comparative curves with respect to X lobe Probability (P_X), is given by (1) or (2) if is considered OES and BES.

$$(1)\ C_{PEP(Y\ to\ X)} = \sqrt{\frac{(E_o)_X}{(E_o)_Y}} \qquad \text{For } P_{Y\ to\ X}$$

$$(2)\ C_{PEP(B\ to\ O)} = \sqrt{\frac{(E_o)_O}{(E_o)_B}} \text{ For } P_{B\ to\ O}\ \ (P_{BORN\ TO\ ORIGIN})$$

C_{PEP} ability to meet P75 is provided by its fractional breakdown (3):

$$(3)\ C_{PEP} = 1 + \sum_{i=1}^{\infty} \frac{1}{x \cdot 2^{(i-1)}} = 1 + \frac{2}{x}$$

x value (4) is obtained from (3):

$$(4)\ x = \frac{2}{C_{PEP} - 1}$$

Two consecutive Electronic Systems can be 1s and $1s^2$ of Helium. According to (1), C_{PEP} ($1s^2$ to 1s) is (5). All IE are collected in [10]. x value (6) is provided by (4) and, since is first atom that has both consecutive Electronic Systems, is called Start Point (S). This first term (S) remains constant for all Electronic System atomicity.

$$(5)\ C_{PEP(B\ to\ O)} = \sqrt{\frac{(E_o)_O}{(E_o)_B}} = \sqrt{\frac{-54{,}41776311\,eV}{-24{,}587387936\,eV}} = 1{,}487695831$$

$$(6)\ x = \frac{2}{C_{PEP} - 1} = \frac{2}{1{,}487695831 - 1} = 4{,}10091674$$

Li, Be, B and so on are as follows after considering $1s^2$ Helium Start Point and increasing Z. In general, x expression (7) is defined by Start Point (S) and Advance (A) where Zo is matched with Start Atomic Number and Z is atom Z in question. In He $1s^2$ case, Z=Zo and therefore, x=S.

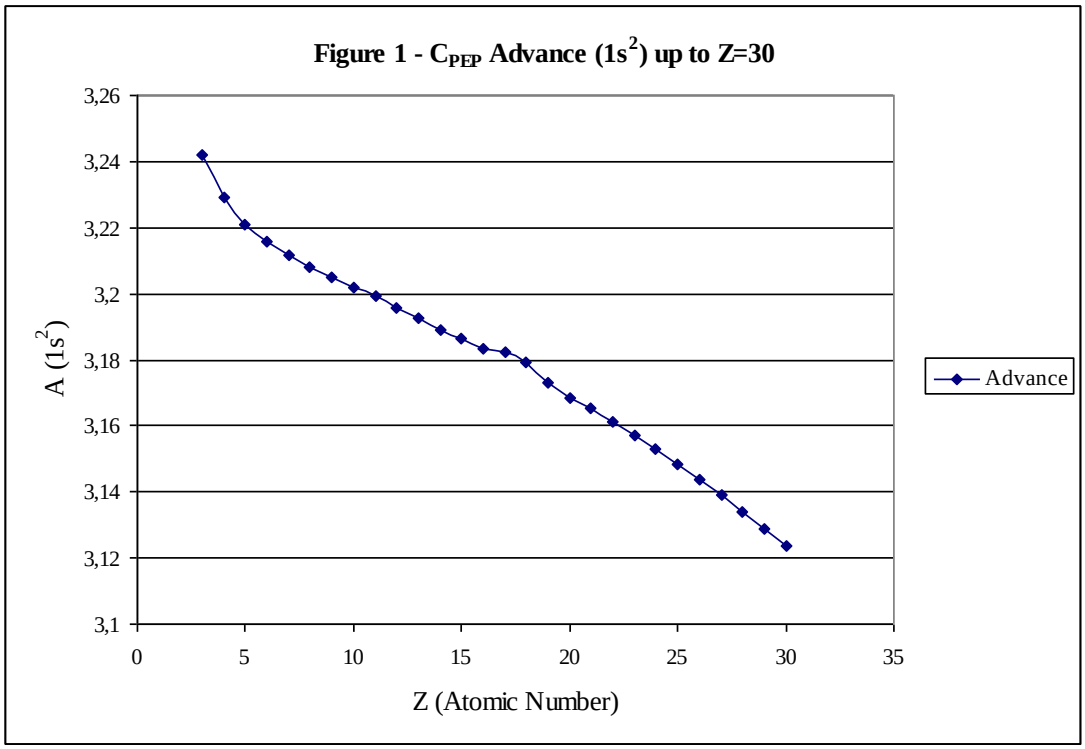
$$(7)\ x = S + A(Z - Zo)$$

Unknown x can be removed (8) with (4) and (7) and Advance (A) as Z function (9) is achieved from (8):

$$(8)\ \frac{2}{C_{PEP} - 1} = S + A(Z - Zo) \rightarrow \frac{2}{\sqrt{\frac{(E_o)_O}{(E_o)_B}} - 1} = S + A(Z - Zo)$$

$$(9)\ A = \frac{\frac{2}{C_{PEP}-1} - S}{Z - Zo} = \frac{\frac{2}{\sqrt{\frac{(E_o)_O}{(E_o)_B}} - 1} - S}{Z - Zo} = \frac{2}{\left(\sqrt{\frac{(E_o)_O}{(E_o)_B}} - 1\right)(Z - Zo)} - \frac{S}{Z - Zo}$$

Advance for $1s^2$ lobe or Electronic System ($A(1s^2)$) vs. Z (**Figure 1**) produces gentle drop $\left(\approx \frac{-0.0038}{\text{atomic unit}}\right)$ that is approximately linear with R^2=0.9877 in low and medium Z, specifically at Z=[3,30].



C_{PEP} Advance vs. Z is sensitive to $1s^2$ IE variations (BES E_o or $(E_o)_B$). $1s^2$ IE is varied in Z equal to 10 (+0.1%), 20 (-0.05%) and 25 (+0.01%) (**Figure 2**). Modified IE spots are included as "A(1s2) (*)" in Figure 2. The smallest variation corresponding to 0.01% increase for Z=25 (Mn) is expanded in **Figure 3**. Likewise, an even smaller variation of 0.002% is easily verifiable. C_{PEP} Advance (C_{PEP} A or simply A) sensitivity to IE variations is high and clearly exceeds $C_{POTI\text{-}AL}$ division sensitivity. Both situations are framed in "P44 Necessary NIN relationships" study [9].

Figure 2 - IE Modification effect in C_{PEP} Advance ($1s^2$)

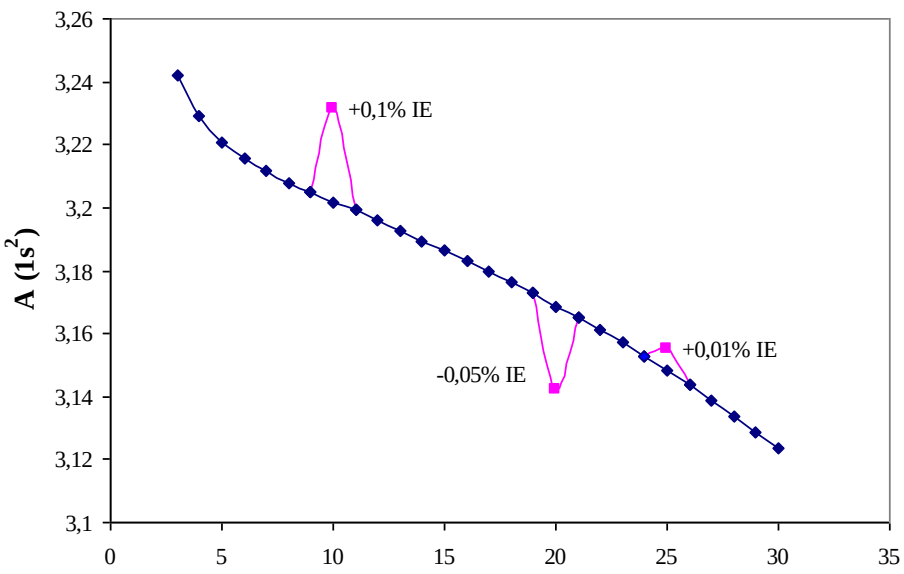


Figure 3 - IE Modification effect in C_{PEP} Advance ($1s^2$) for Z=25

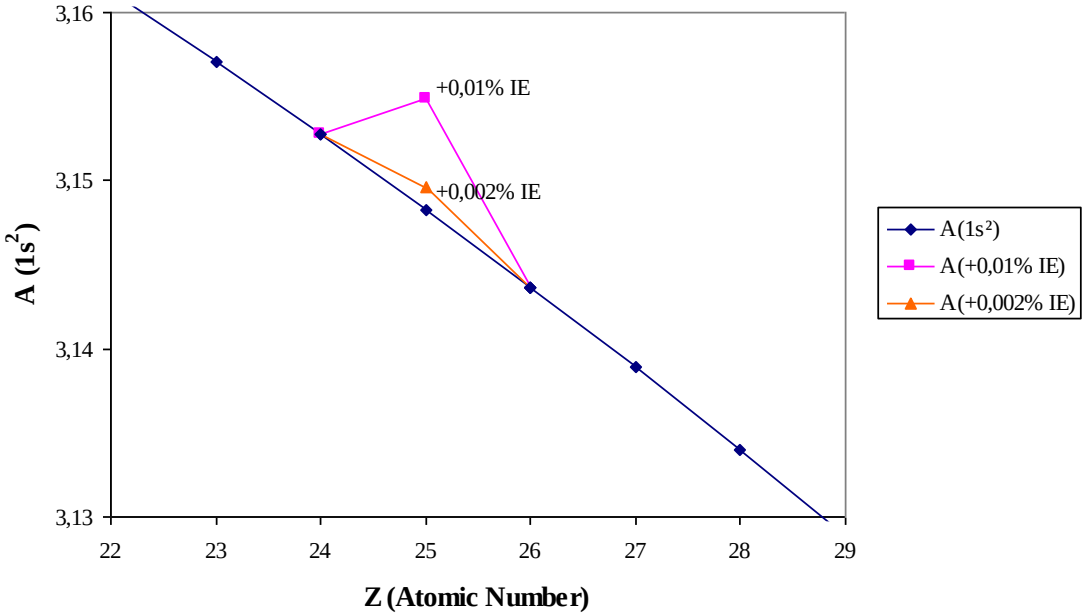
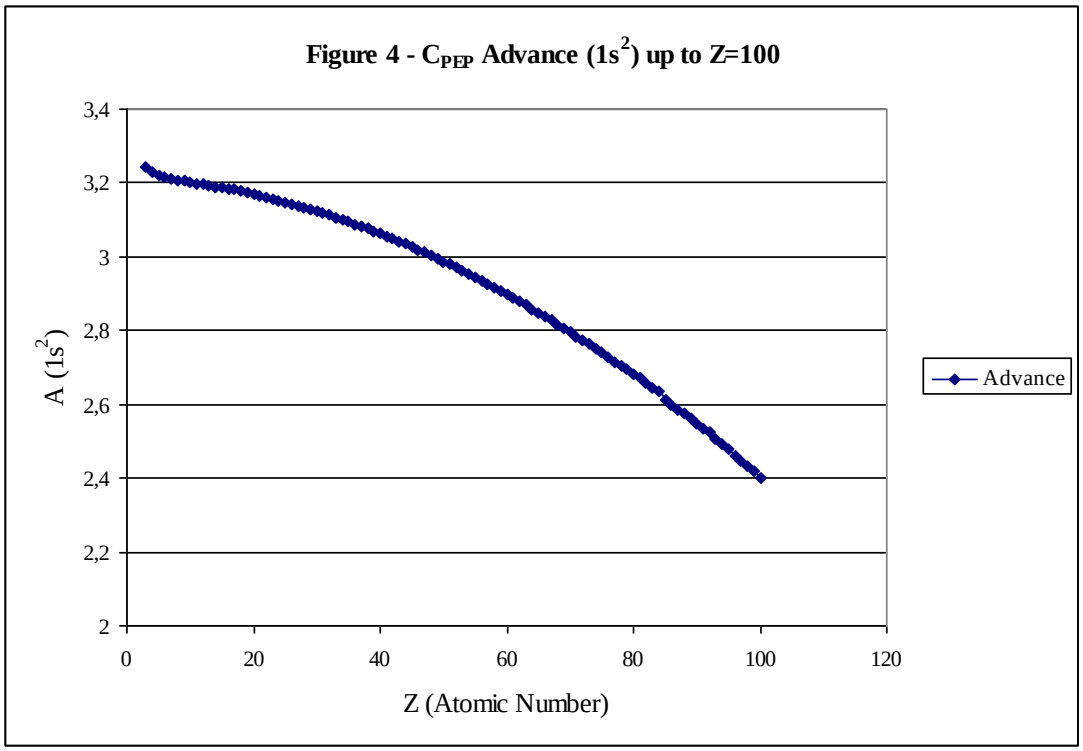


Figure 4 corroborates how downward trend for C_{PEP} Advance ($1s^2$) is maintained when Z is brought to Z=100.

Figure 4 - C_{PEP} Advance ($1s^2$) up to Z=100

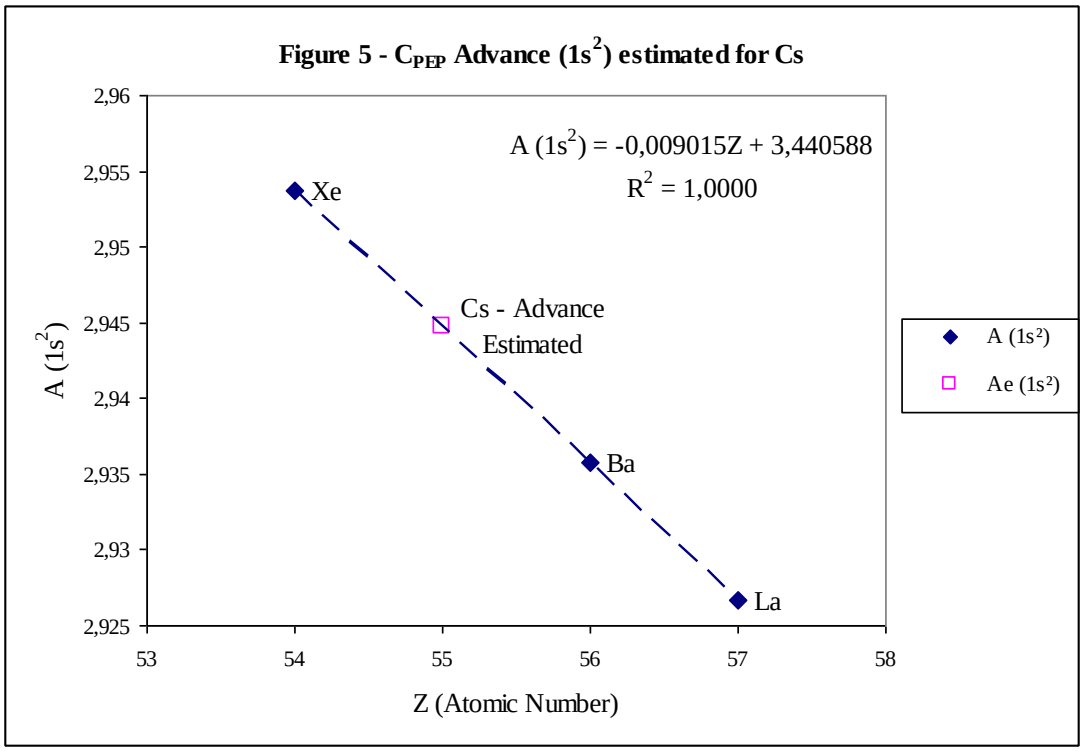


Calculation can be inverse and obtain $(E_o)_B$ (10) from $(E_o)_O$ (in this case, $1s^2$ and 1s respectively) and working on C_{PEP} Advance trend. Although initially the study is focusing on $C_{PEP(B\ to\ O)}$ and therefore on BES or Born Electronic System ($1s^2$) and OES or Origin Electronic System (1s), can also be applied on $C_{PEP(Y\ to\ X)}$ and, consequently, on any two Electronic Systems. Suffix E indicates that is "Estimated value". Advance is estimated → $(C_{PEP})_E$ → $((Eo)_B)_E$

$$(10)\ ((E_O)_B)_E = \frac{(E_o)_O}{(C_{PEP})_E^{\,2}} = \frac{(E_o)_O}{\left(1 + \frac{2}{S + A_E\,(Z - Zo)}\right)^2}$$

Advance ($1s^2$) for Z=55 Cesium is estimated from A ($1s^2$) of Xenon, Barium and Lanthanum. Advance ($1s^2$) vs. Z of Xe, Ba and La provides straight line with optimal regression coefficient (R^2=1.0000) and whose line equation is in **Figure 5**. This equation is used to estimate Advance ($1s^2$) for Z=55 Cesium (11) and is included in Figure 5.

$$(11)\ A_E\left(1s^2\ Cs\right) = -0.009015 \cdot 55 + 3.440588 = 2.944763$$



$((E_o)_B)_E$ can be obtained (12) from equation (10):

1) $(E_o)_O$ is -42912,99 eV [10]
2) Atomic Number (Z) is 55 for Cesium and Zo is 2 (Helium)
3) Start Point is given in (6)
4) Estimated Advance (A_E) is in (11)

$$(12)\ ((E_O)_B)_E = \frac{-42912{,}99\ \text{eV}}{\left(1+\frac{2}{4.10091674+2.944763\,(55-2)}\right)^2} = -41861{,}0693\ \text{eV}$$

Percentage change between estimated IE and IE [10] is very low (13)

$$(13)\ \text{Percentage change}\ (\%) = \frac{-41861{,}0693\text{eV}+41861{,}073\text{eV}}{-41861{,}073\text{eV}}100 = -0{,}0000089\,\%$$

C_{PEP} with electrons with n=2 electronic configuration

n=2 has new points:

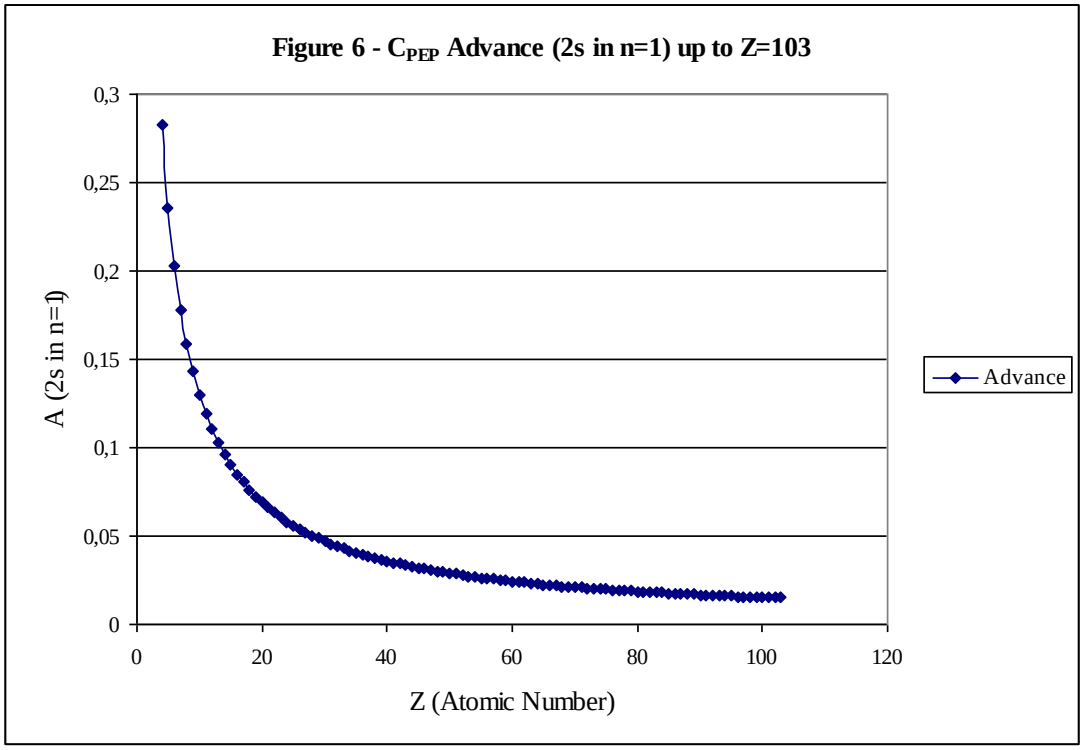
1) OES in n=2 is 2s by its most external lobe, but at the same time is BES if its lobe most internal is observed. This internal 2s lobe is born in n=1 from 1s OES. In the same way, $2s^2$ has two lobes are born from 1s in n=1 and 2s in n=2.

2) There are eight Electronic Systems in n=2. C_{PEP} calculation can be with OES (2s) or with immediately more energetic BES through individual C_{PEP} ($C_{PEP\text{-}i}$) as is developed in following point.

C_{PEP} Advance (2s in n=1) is calculated as with C_{PEP} Advance ($1s^2$). OES in n=1 is also 1s and **Figure 6** shows downward trend with Z, although this trend differs from that obtained for C_{PEP} Advance ($1s^2$) (Figure 4). Figure 6 has potential trend line with very good regression coefficient (R^2=0.9997) and whose equation is given in (14):

$$(14)\ A(2s \text{ in } n=1) = 1{,}0974Z^{-0{,}929}$$

Figure 6 - C_{PEP} Advance (2s in n=1) up to Z=103



Sensitivity to same percentage variation of $(IE)_B$ is not so high as with C_{PEP} Advance ($1s^2$) (Figures 2 and 3) because C_{PEP} implies E_o (or IE) quotient (1) and (2) and /IE(1s)/ > /IE(1s2)/ vs. now /IE(1s)/ >>> /IE(2s)/

Consecutive Couplings in n=2

Two cases above (C_{PEP} Advance ($1s^2$) and C_{PEP} Advance (2s in n=1)) are referenced to OES and are indicated as C_{PEP} or $C_{PEP\text{-}G}$ where G is "Global". $C_{PEP\text{-}i}$ is used when BES is referred to the next most energetic BES and "i" means individual. For example, $C_{PEP\text{-}i}$ Advance ($2p^3$) is referred to $2p^2$ BES. If E.S is Electronic System, E.S+1 is the next most energetic Electronic System and O is OES, $C_{PEP\text{-}i}$ can be formulated (15) based on its C_{PEP} (C_{PEP} (E.S)) and C_{PEP} of the next most energetic Electronic System (C_{PEP} (E.S+1)), i.e. based with global C_{PEP} . (16) is (15) applied to $C_{PEP\text{-}i}$ ($2p^3$).

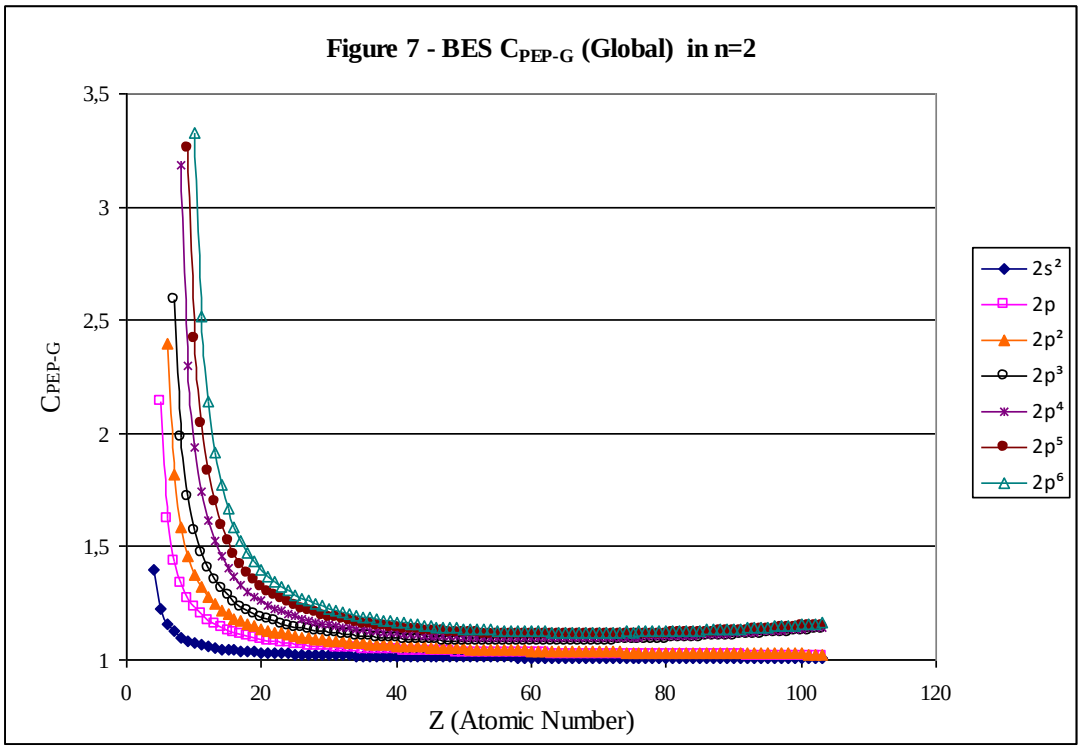
$$(15)\ C_{PEP-i}(S.E) = \left(\frac{E_o(S.E+1)}{E_o(S.E)}\right)^{1/2} = \frac{C_{PEP}(S.E)}{C_{PEP}(S.E+1)} = \frac{\left(\frac{(E_o)_O}{E_o(S.E)}\right)^{1/2}}{\left(\frac{(E_o)_O}{E_o(S.E+1)}\right)^{1/2}}$$

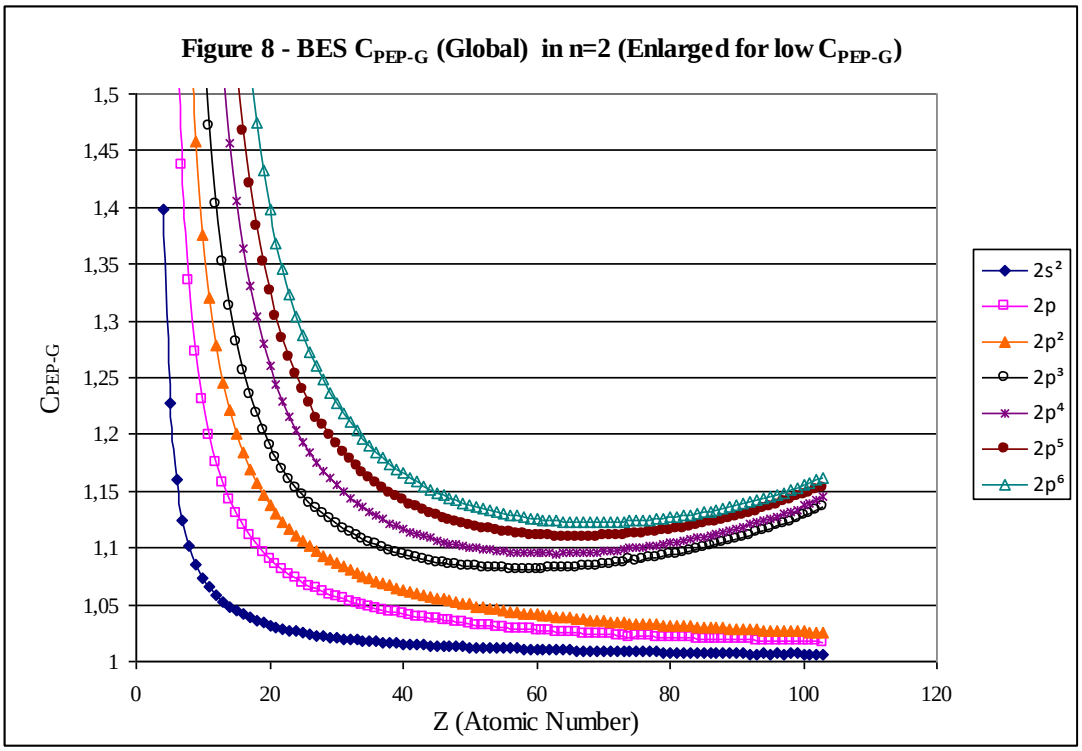
$$(16)\ C_{PEP-i}(2p^3) = \left(\frac{E_o(2p^2)}{E_o(2p^3)}\right)^{1/2} = \frac{C_{PEP}(2p^3)}{C_{PEP}(2p^2)} = \frac{\left(\frac{(E_o)(2s)}{E_o(2p^3)}\right)^{1/2}}{\left(\frac{(E_o)(2s)}{E_o(2p^2)}\right)^{1/2}}$$

Atomicity is observed either by analyzing C_{PEP} as Advance C_{PEP}, both General (G) and Individual (i).

Atomicity in C_{PEP-G} (n=2)

C_{PEP-G} or simply C_{PEP} is defined as C_{PEP} referenced to OES (in this case, 2s). Electronic Systems (E.S) in n=2 with C_{PEP} (that is to say, BES) are $2s^2$ and from 2p to $2p^6$. C_{PEP} vs. Z is represented for these seven BES up to Z=103 (**Figure 1**). Low C_{PEP-G} zone is expanded in **Figure 2** to focus attention on two BES groups as Z increases.





Figures enlarged for low C_{PEP} in n=3 and n=4 are in **Annex I**. Behaviour is the same and sets stage for realization of P75, P76, P77, P78 and following Postulates treated within P44 Necessary NIN relationships.

P76 C_{PEP}: grouped and linear trends with other BES I: Tete Orchestra with Triad, quartet an duo

In C_{PEP} vs. Z, C_{PEP} of different BES are grouped and these groupings form linear trends when C_{PEP} of each BES are considered correlatively and compared with the other BES. For all n, these C_{PEP} vs. Z curves have the same shape and perform the same np^3-centered modification.

Highlights relating to BES groups in triad, quartet and duo:

A) BES groups based on correlative C_{PEP} in Low Z

Three groups are observed for low Z in Figure 7.

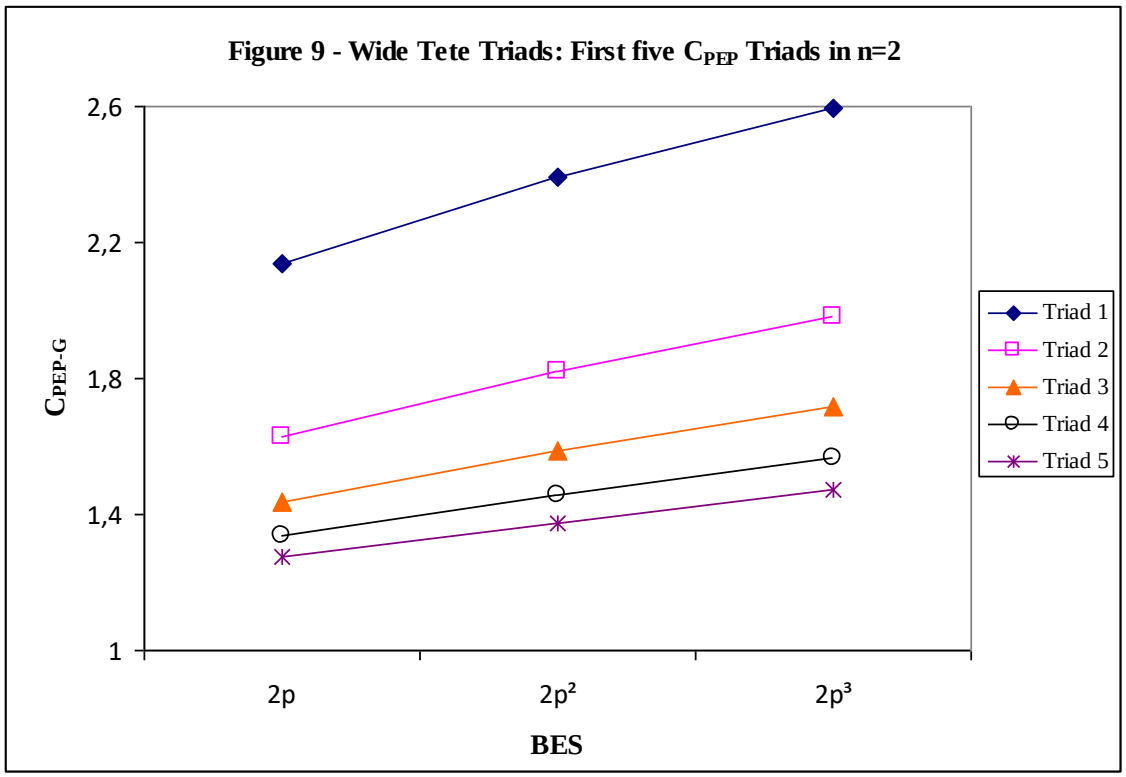
1) $2s^2$ is initially one solitary BES
2) 2p, $2p^2$ and $2p^3$ have a higher C_{PEP} value as can be expected (2) and can also join their respective first C_{PEP} with a straight line forming a triad called Wide Tete Triad.
3) The second three BES with $2p^y$ configuration ($2p^4$, $2p^5$ and $2p^6$) do the same as the first three BES and now triads have their closest points and are called Narrow Tete Triad.

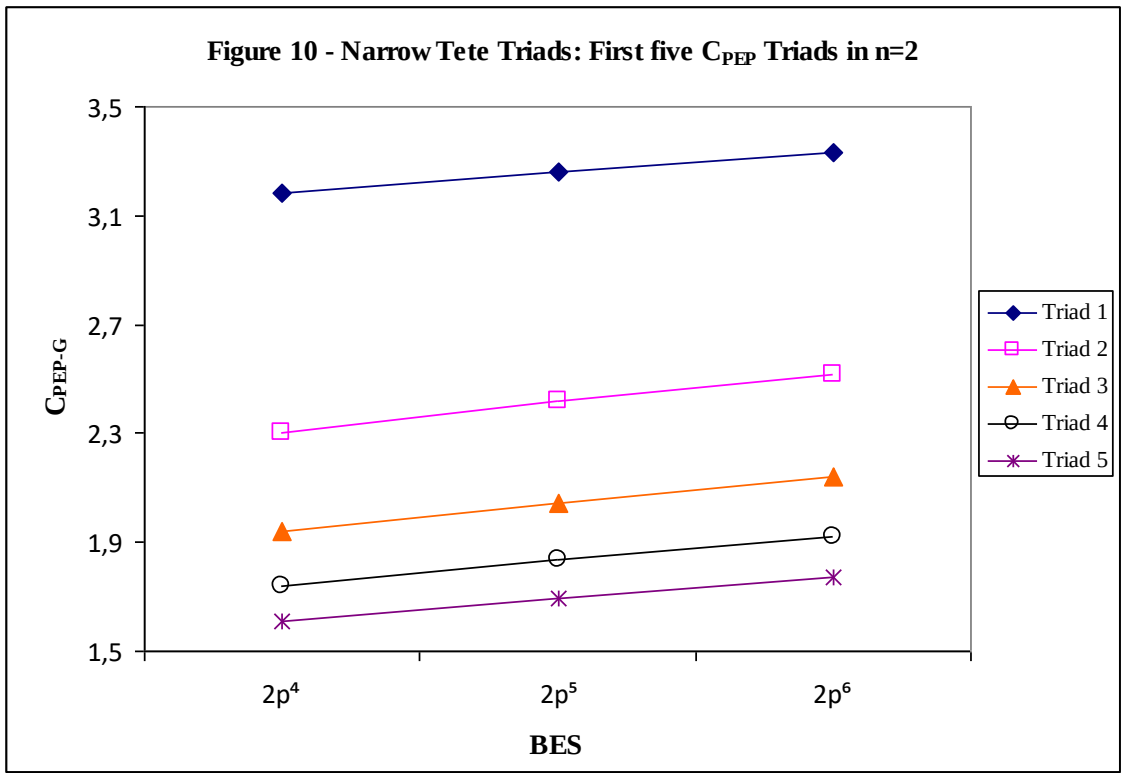
Atoms symbols that make up the first 5 triads are in **Table 1**. C_{PEP} using (2) with [10] data for these triads are in **Table 2**. Representation of the first five triads for Wide Tete

Triad is in **Figure 9** and for Narrow Tete Triad in **Figure 10**. Correct linearity of the triads is corroborated in both figures. In axis X of the figures, BES is indicated instead of Z to be able to observe more jointly several triads since only 3 units of Axis X are used.

Table 1 - Atoms Symbols of the first five C_{PEP} Triads in n=2						
C_{PEP} number	Wide Tete Triad			Narrow Tete Triad		
	2p	$2p^2$	$2p^3$	$2p^4$	$2p^5$	$2p^6$
1	B	C	N	O	F	Ne
2	C	N	O	F	Ne	Na
3	N	O	F	Ne	Na	Mg
4	O	F	Ne	Na	Mg	Al
5	F	Ne	Na	Mg	Al	Si

Table 2 - C_{PEP} values of the first five C_{PEP} Triads in n=2						
C_{PEP} number	Wide Tete Triad			Narrow Tete Triad		
	2p	$2p^2$	$2p^3$	$2p^4$	$2p^5$	$2p^6$
1	2,137999	2,393229	2,595225	3,184712	3,260205	3,329800
2	1,626346	1,818504	1,983203	2,301183	2,415969	2,518222
3	1,436332	1,585628	1,718467	1,941212	2,046186	2,141381
4	1,335732	1,457793	1,569042	1,741174	1,833949	1,919265
5	1,273180	1,376391	1,471954	1,612886	1,695109	1,771618





B) BES groups based on correlative C_{PEP} in High Z

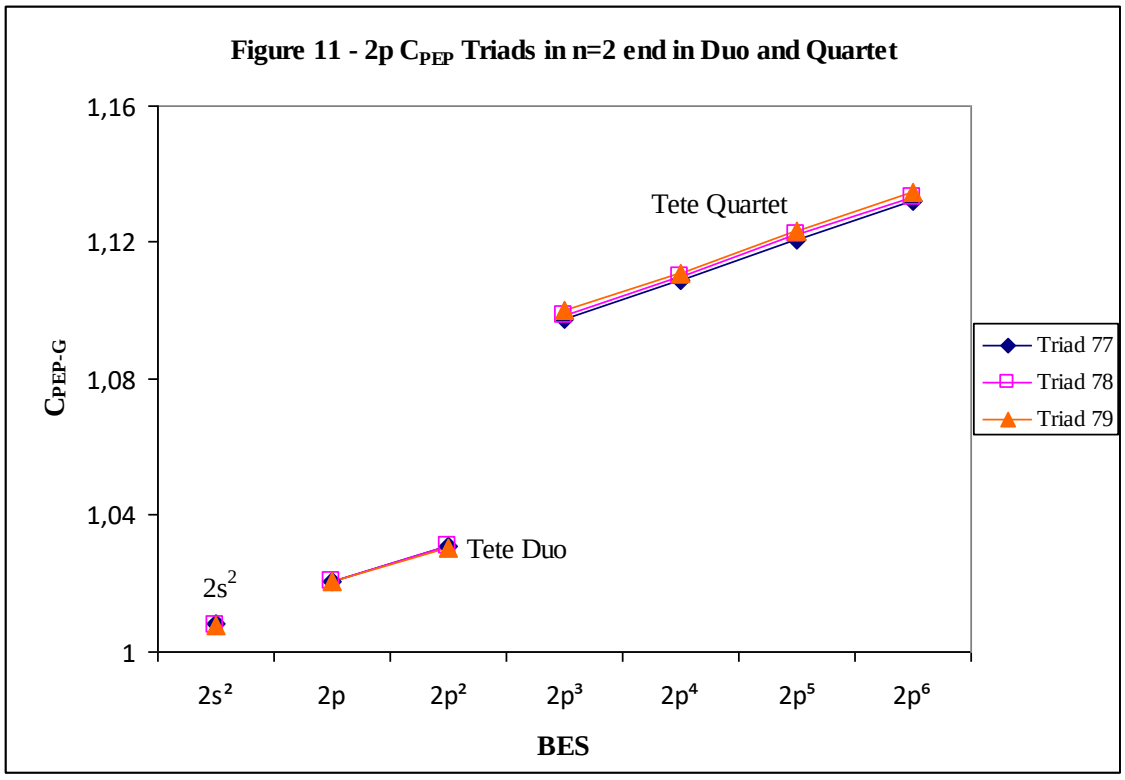
Separation of $2p^3$ C_{PEP} from initial situation is produced with increasing Z and $2p^3$ C_{PEP} is progressively incorporated into Narrow Tete Triad and Tete Quartet is formed. For its

part, Wide Tete Triad is reduced to Tete Duo. This fact is already intuited when observing C_{PEP} groups in Figure 8.

To corroborate and as in the previous point, C_{PEP} of each BES are considered correlatively and compared with the other BES. Atoms with C_{PEP} number 77, 78 and 79 in $2p^y$ BES have been selected, C_{PEP} calculated have been recorded in **Table 3** and their representation of Tete Quartet and Tete Duo is in **Figure 11**.

Table 3 – Atoms Symbols and C_{PEP} values of 77, 78 and 79 C_{PEP} Triads in n=2

C_{PEP} number	Tete Duo		Tete Quartet			
	2p	$2p^2$	$2p^3$	$2p^4$	$2p^5$	$2p^6$
77	Tl 1,020725	Pb 1,031019	Bi 1,097520	Po 1,108682	At 1,120908	Rn 1,132132
78	Pb 1,020631	Bi 1,030727	Po 1,098748	At 1,109915	Rn 1,122125	Fr 1,133368
79	Bi 1,020427	Po 1,030321	At 1,100219	Rn 1,111148	Fr 1,123351	Ra 1,134605



P77 C_{PEP}: grouped and linear trends with other BES II: Asymptotes on musical staff for 3-PA (n,I)

This point is centred in asymptotic tendency of ns^2 and Tete Duo (np and np^2) based on correlative C_{PEP} in High Z. Highlights relating to these three BES groups whose differential C_{PEP} relations tends asymptotically as Z grows:

A) $2s^2$ and Tete Duo based on correlative C_{PEP} in High Z

$2s^2$ is about to be aligned with Tete Duo (2p and $2p^2$) as Z increases. This 3-point alignment can be studied with (17) and would be a perfect alignment if 3-PA=1 (17), where 3-PA is "3-point alignment coefficient". Alignment is improved as Z increases, but 3-PA is brought to 0.8 by increasing Z rather than asymptotically 3-PA→1 (**Figure 12**). Therefore, and although it can not be considered a linear trend, C_{PEP} of $2s^2$, 2p and $2p^2$ can be treated as one different triad with 3-PA(2,I)→0.8 Nomenclature used indicates in parentheses: (principal quantum number, roman number representing BES group whose C_{PEP} is considered (**Table 4**))

Table 4 – Roman number representing BES group whose C_{PEP} is considered in 3-point alignment coefficient (3-PA)

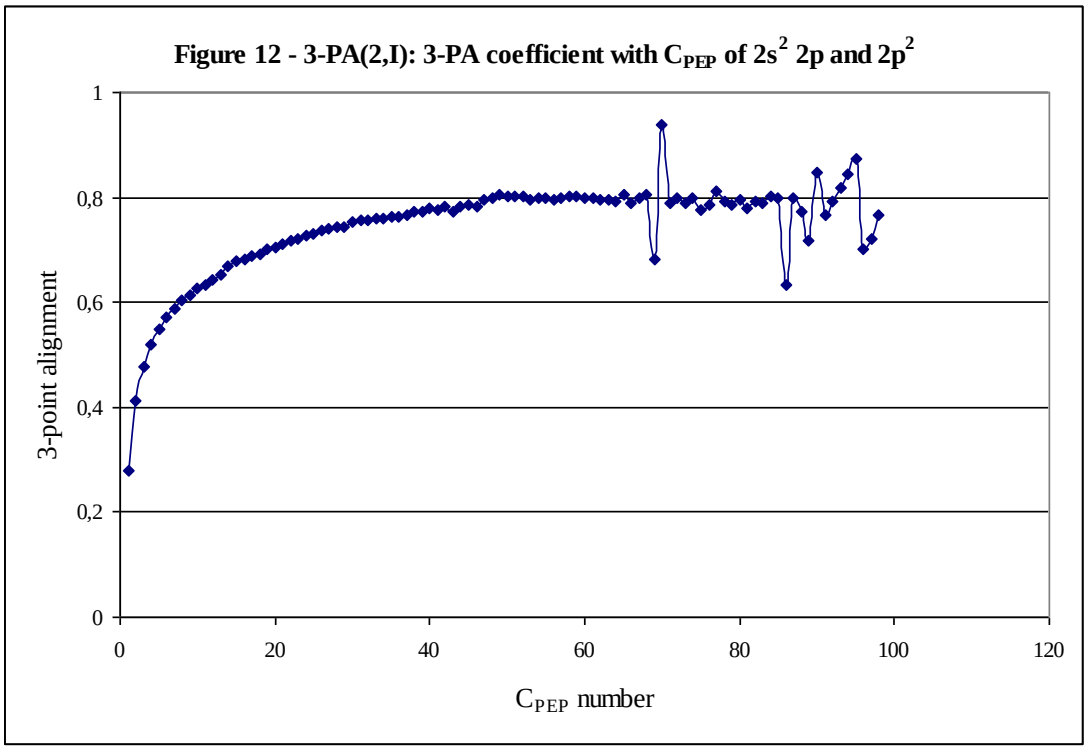
Roman Number	I	II.A	II.B	II.M
BES Group	$2s^2$ 2p and $2p^2$	$2p^3$ $2p^4$ and $2p^5$	$2p^4$ $2p^5$ $2p^6$	$\frac{\text{II.A} + \text{II.B}}{2}$

Points follow asymptotic trend (3-PA→0.8) although there are few points with marked discontinuities when Z is very high. These discontinuities are studied with $C_{PEP\text{-}i}$

$$(17)\ 3-\text{PA} = \frac{C_{pep}(2p^2) - C_{pep}(2p)}{C_{pep}(2p) - C_{pep}(2s^2)}$$

(18) is general (17) equation where L, M and H is lowest, medium and highest electron energy and three are energetically consecutive. In example (17), L, M and H are $2p^2$, 2p and $2s^2$ respectively.

$$(18)\ 3-\text{PA} = \frac{C_{pep}(L) - C_{pep}(M)}{C_{pep}(M) - C_{pep}(H)}$$



B) ns^2 and Tete Duo based on correlative C_{PEP} in High Z

When n>2, 3-PA(n,I) also meets asymptotic trend when Z grows. Asymptotes are directed toward 3-PA(n,I)→x where x is included in **Table 5** and corresponding representation in analogy to Figure 12 is filled in **Annex II**.

Table 5 – x asymptote value for 3-PA(n,I)				
n	2	3	4	5
x value	4/5	4/8	4/11	4/14?

P78 C_{PEP}: grouped and linear trends with other BES II: Asymptotes on musical staff for 3-PA (n,II)

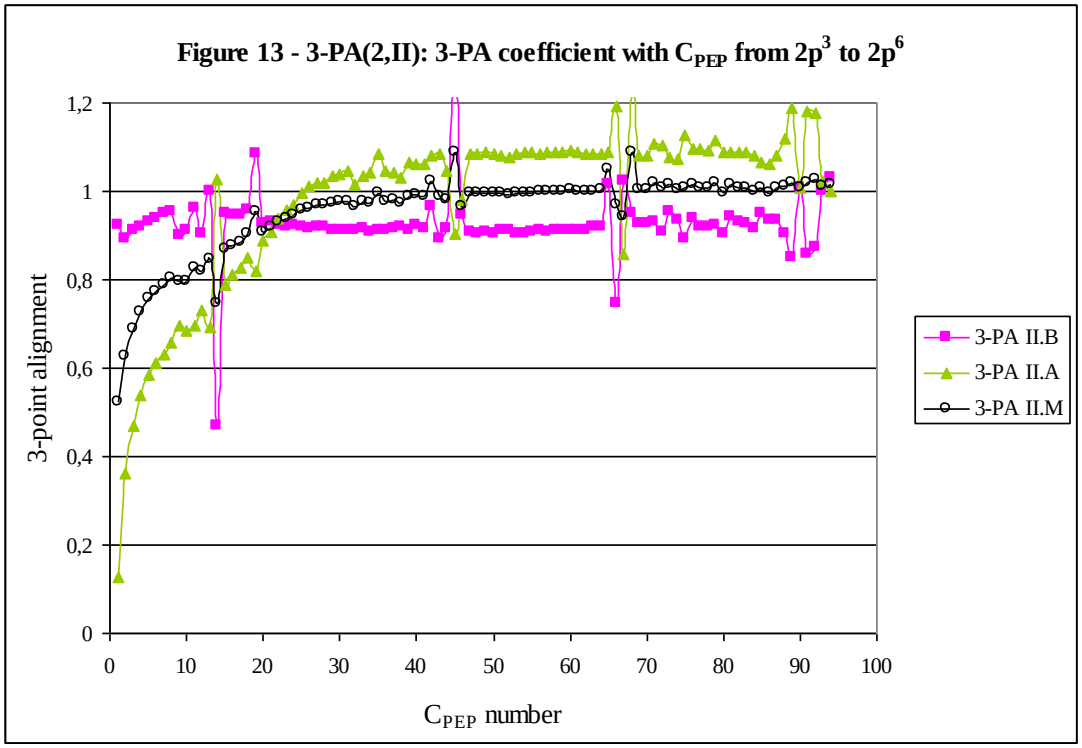
This point is centred in asymptotic tendency of Tete Quartet (from np^3 to np^6) based on correlative C_{PEP} in High Z. Highlights relating to these four BES groups whose differential C_{PEP} relations tends asymptotically as Z grows:

A) Tete Quartet based on correlative C_{PEP} in High Z (n=2)

II.A is situated slightly above linearity ratio of the triad and II.B is situated smoothly below linearity as a mirror image. The overall result is that II.M is located asymptotically on 3-PA→1 and provides Tete Quartet with linearity (19) (**Figure 13**). Nomenclature used is in Table 4 (Previous point).

(19) 3-PA(2,II.A) > 1

3-PA(2,II.B) < 1
3-PA(2,II.M) → 1 (Linearity of Tete Quartet)



B) Tete Quartet based on correlative C_{PEP} in High Z (n>2)

When n>2, 3-PA(n,II.A) and 3-PA(n,II.B) maintain the marked tendency of specular image seen with n=2 and Tete Quartet is governed in linearity since 3-PA(n,II.M) is also asymptotically located on 1 (**Figures in Annex III**).

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[10] Kramida, A., Ralchenko, Yu., Reader, J., and NIST ASD Team (2014). NIST Atomic Spectra Database (ver. 5.2), [Online]. Available: http://physics.nist.gov/asd

Abbreviations Table
Following Table indicates abbreviations used in this theory and its use in article in question is marked with X. 6, 7, 8 and 9 are [6] [7] [8] & [9] respectively. 21 is present article.

Abbreviation	6	7	8	9	21	Meaning
3-PA(x,y)					X	3-point alignment(n,Group)
A					X	Advance (A or C_{PEP} A). Related with x and S.
A_E					X	Estimated Advance (A)
BES	X	X	X	X	X	Born Electronic System
c_i	X	X	X	X	X	EE Orbital circumference
C_F	X		X	X		Wavelength compaction factor
C_{MON}	X	X				C_F without C_{POTI}
C_{PEP}	X	X	X	X	X	Probability electrons pair coefficient
C_{PEP-G}					X	Global C_{PEP} and usually written simple as C_{PEP}
C_{PEP-i}					X	Individual C_{PEP} (BES is referred to the next energetic BES)
C_{POTI}	X	X	X	X		Probabilistic Orbital Tide in Third Feliz Solution
C_{PEP} number					X	C_{PEP} number following Z growth
$C_{POTI-AL}$		X	X	X	X	C_{POTI} Angular Limit
$C_{POTI-GAL}$			X			C_{POTI} Geometric Angular Limit
$C_{POTI-LAG}$			X			C_{POTI} Lobe always growing
d	X	X	X	X		Birth wavelength division or simply, division
EE	X	X	X	X	X	Electronic extreme
E_o	X	X	X	X		Initial, birth or output energy
$((Eo)_B)_E$					X	Estimated born E_o
E.S.					X	Electronic System (Lobe)
E_i			X			EE energy
f	X					Constant in Victoria Equation
F		X				Constant f multiplied by z
GNC	X	X	X	X		Geometric NIN Coupling
ħ	X		X			Reduced Planck´s constant
H_i	X	X	X	X	X	EE Circular orbit height
IE	X	X	X	X	X	Ionization Energy
m_e			X			Electron mass

J	X					C_F order in Second Feliz Solution (From x=1 to J)
λ_{Birth} λ		X	X			Birth wavelength
M	X					MON (Modified Orbital Number)
MON	X	X	X	X		Modified Orbital Number
NIN	X	X	X	X	X	Negative in Negative (Electron in electron concept)
OES	X	X	X	X	X	Origin Electronic System
OPA			X			Orbital Planes Axis
P_i	X	X	X	X		EE Probability
P	X					PEP (Principal Electronic Part)
PEP	X					Principal Electronic Part
PNC	X	X	X	X		Probabilistic NIN Coupling
PUB C_{PEP}					X	Probability Union Between C_{PEP}
$P_{Y\ to\ X}$	X					P_y with respect to X lobe
r_i	X	X	X	X	X	Distance between nucleus and EE
S					X	Start Point meets: S=x
x					X	x equals to $2/(C_{PEP}-1)$
v_i			X			EE velocity
z	X	X	X	X		Effective nuclear charge
Z		X	X		X	Atomic number
Zo					X	Zo is matched with Start Atomic Number (S)

	09	Electron probability with NIN coupling in n>2 and necessary NIN relationships.
Part II – Excited electron: Tete Vic and LAN	10	Excited electrons by Torrebotana Central Line: Tete Vic Equation.
	11	Excited electrons: LAN plains for Tete Vic Equation.
	12	Relation of Riquelme de Gozy: LAN linearity with energy of excited states.
	13	Relation of Fly Piep de Garberí: LAN^{-1} and Ionization Energy.
	14	Relation of Silva de Peral & Alameda: LAN interatomicity with energetic relation.
	15	Relation of Silva de Peral & Alameda II: jump from n_ss to ns.
	16	SPA III: Mc Flui transform for Silpovgar III and Silpovgar IV.
	17	SPA IV: Silpovgar IV with Piepflui. Excess Relativistic: influence in LAN and SPA
	18	Feliz Theory of Eo vision - Relativistic II: influence in Riquelme de Gozy
	19	Pepliz LAN Empire I: $LAN_{n\to\infty}$ vs. LAN(P50)
	20	Pepliz LAN Empire II: $LAN_{n\to\infty}$ vs. LAN(P50)
Part III - NIN: C_{PEP} & C_{POTI}	21	Electron Probability: PUB C_{PEP} I (Probability Union Between C_{PEP}) - Necessary NIN relationships
	22	Electron Probability: PUB C_{PEP} II in "Flui BAR" (Flui (BES A (Global Advance) Region)
	23	Orbital capacity by advancement of numbers - Electron Probability: PUB C_{PEP} III: "Flui BAR" II and $C_{PEP\text{-}i}$
	24	Electron Probability: 1s electron birth: The last diligence to Poti Rock & Snow Hill Victoria
24 hours of new day		

Annex I BES C_{PEP-G} (Global) in n=3 and n=4 (Enlarged for low C_{PEP-G})

Figure 8.B - BES C_{PEP-G} (Global) in n=3 (Enlarged for low C_{PEP-G})

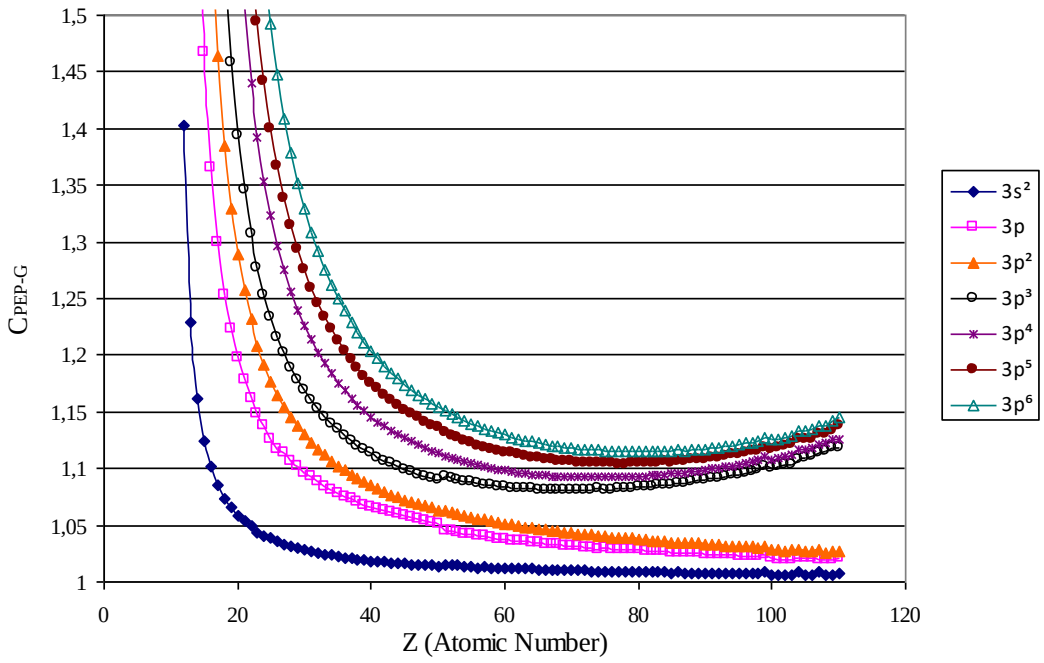
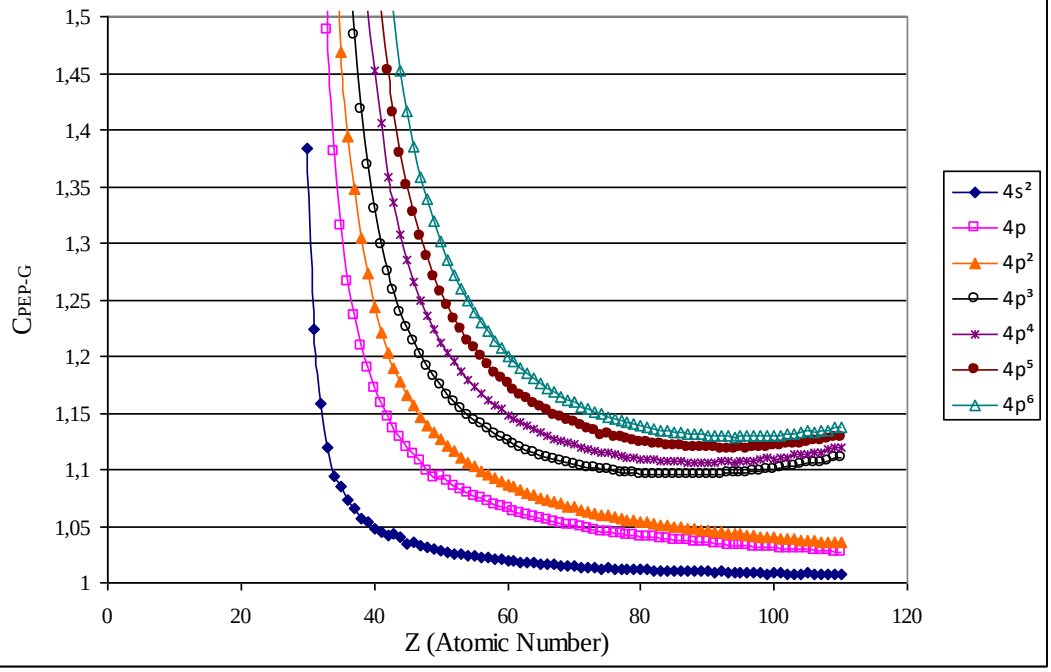
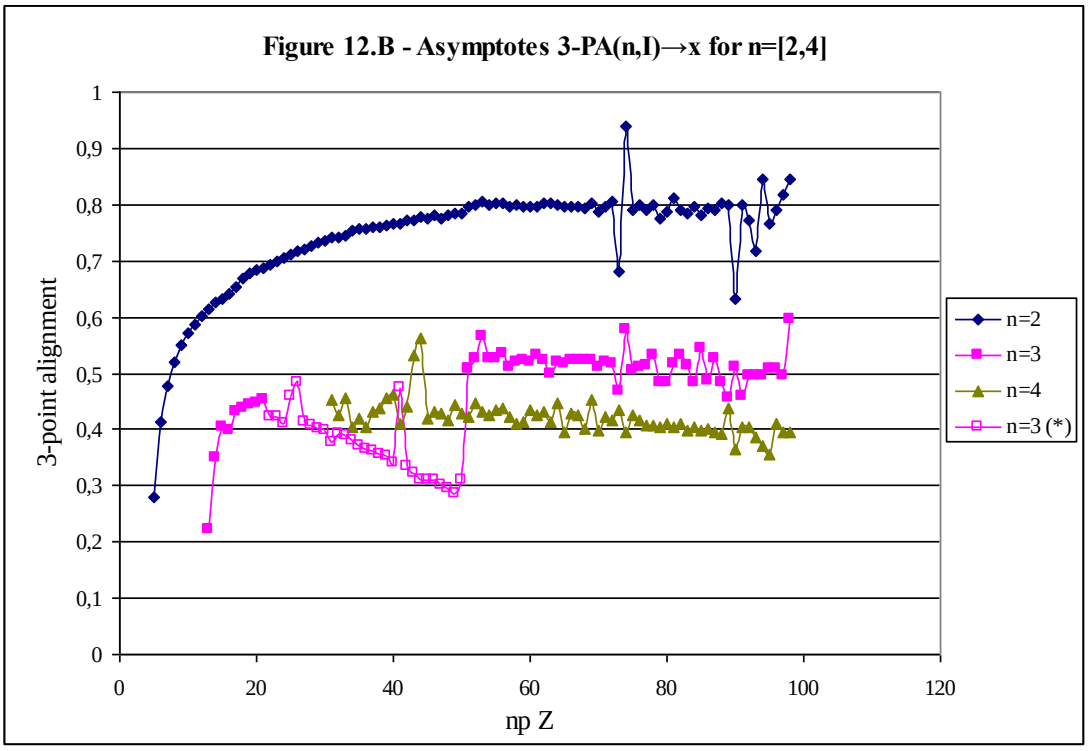


Figure 8.C - BES C_{PEP-G} (Global) in n=4 (Enlarged for low C_{PEP-G})



Annex II Asymptotes 3-PA(n,I)→x for n=[2,4]

3-PA(n,I)→x asymptotes (x in Table 5) are in **Figure 12.B** for n=[2,4]. Method is always correlative C_{PEP} but, for a better comparison and instead of selecting C_{PEP} number, Axis X is Atomic Number (Z) of atom whose 2p is included in 3-PA(17) calculation. A section of 3-PA(3,I) generates a discontinuity (indicated with empty squares in "n=3 (*)") and must be studied in later article together with $C_{PEP\text{-}i}$, 3-PA(3,II) and other P44 Necessary NIN relationships.



Annex III 3-PA(3,II): 3-PA coefficient with C_{PEP} from np^3 to np^6 n=[3,5]

Discontinuity discussed in Annex II is observed in **Figure 13.B** where is represented 3-PA(3,II) vs. C_{PEP} number. Discontinuity occurs in C_{PEP} number ≈ 33 corresponding to 3p Z ≈ 50. After discontinuity, three 3-PA(3,II) curves are placed in a similar way to what is seen with 3-PA(2,II) (Figure 13).

Figure 13.C and 13.D show 3-PA(4,II) and 3-PA(5,II) respectively where is corroborated fulfilment of P78. Data for 3-PA(5,II) describe less adjusted behaviour as with 3-PA(5,I), but still, meets trends predicted by P77 and P78.

Figure 13.B - 3-PA(3,II): 3-PA coefficient with C_{PEP} from $3p^3$ to $3p^6$

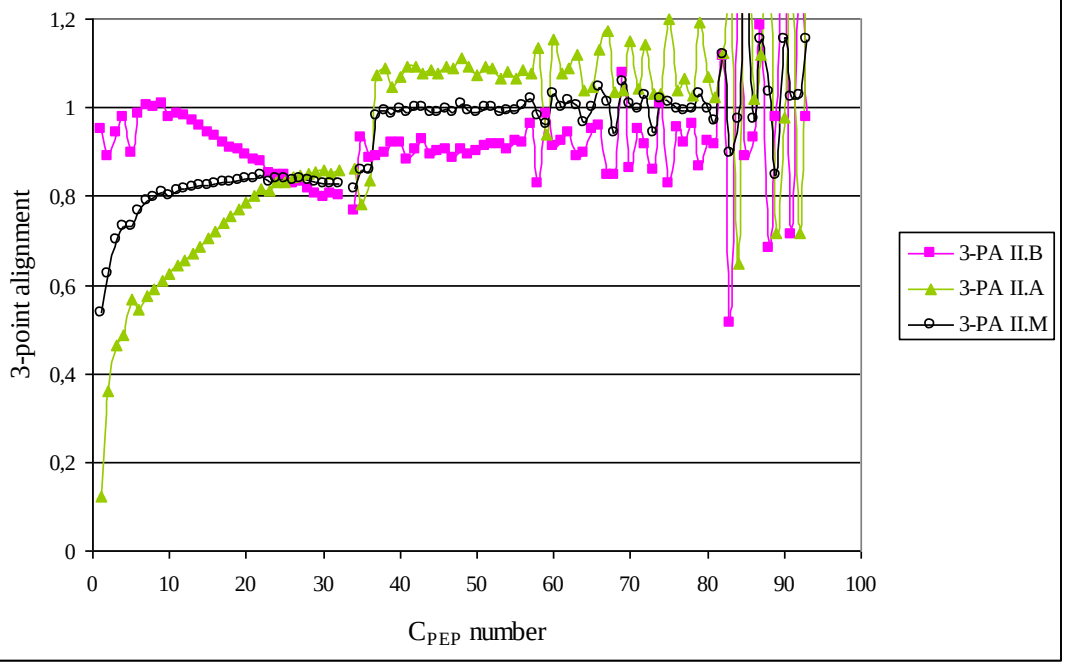
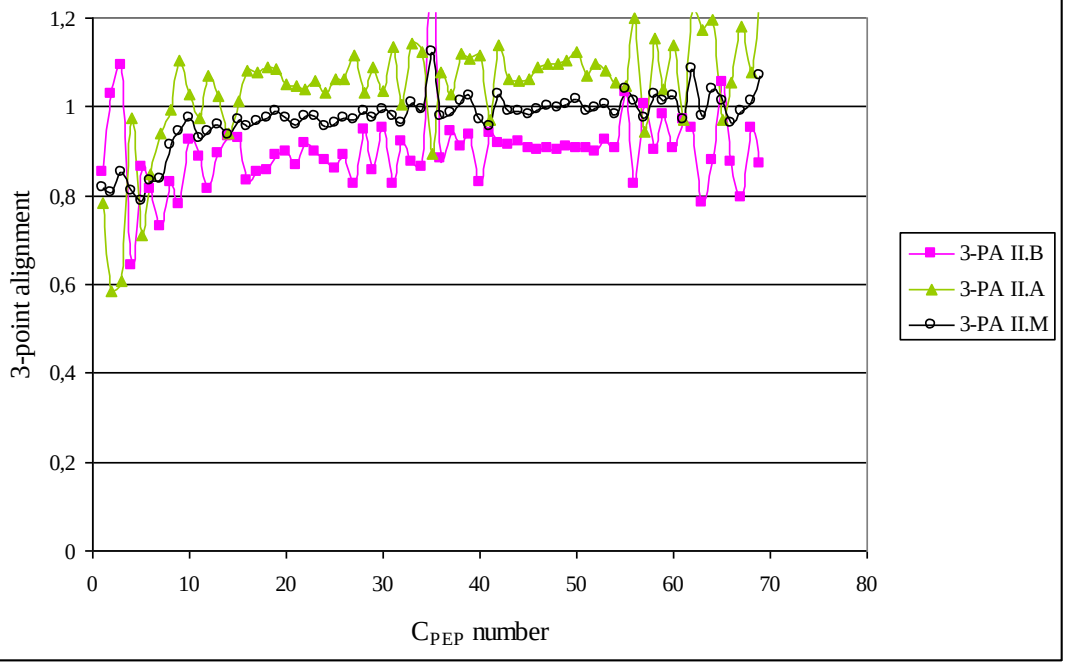


Figure 13.C - 3-PA(4,II): 3-PA coefficient with C_{PEP} from $4p^3$ to $4p^6$



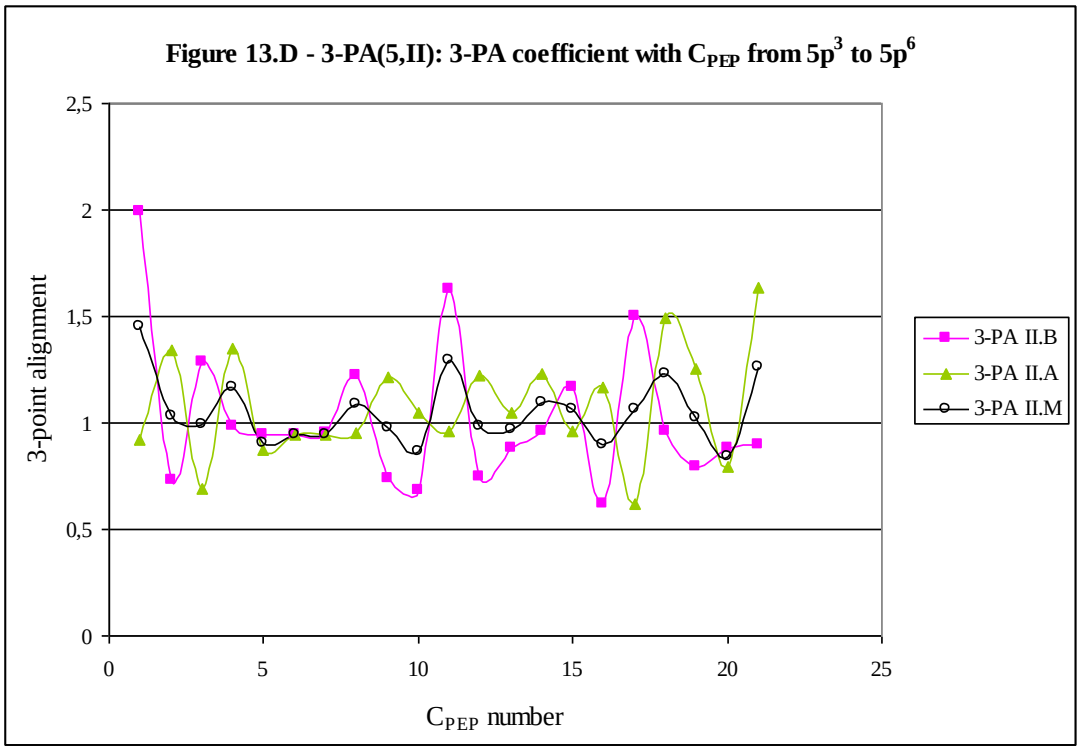


Figure 13.D - 3-PA(5,II): 3-PA coefficient with C_{PEP} from $5p^3$ to $5p^6$
2,5
2
1,5
1
0,5
0
3-point alignment
0
5
10
15
20
25
C_{PEP} number
3-PA II.B
3-PA II.A
3-PA II.M