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Yin Yang Energy

Janez Špringer*

Cankarjevacesta 2, 9250 GornjaRadgona, Slovenia, EU

Corresponding Author:** ***Janez Špringer, *Cankarjeva cesta 2, 9250 Gornja Radgona, Slovenia, EU*

Abstract: *Yin Yang energy at orbit halving is presented.*

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1. Introduction

The subtle orbit of elliptic length n_x(yin orbit) can be divided to two equal subtle orbits of elliptic length$\frac{n_x}{2}$ (yang orbits). It is only necessary to consider that halved orbits (yang) are energetically less favourable than whole one (yin)so the input of energy is needed for their formation [1]:

$$\Delta E_{forming} = E_{yang} - E_{yin}. \tag{1a}$$

$$\Delta E_{forming} = Ry.\alpha^{-1}\left(-\frac{1}{s\left(\frac{n_x}{2}\right)} - \left(-\frac{1}{\frac{s(n_x)}{2}}\right)\right). \tag{1b}$$

Taking into account the average elliptic-hyperbolic length

$$s(n_x) = n\left(2 - \frac{1}{\sqrt{1+\frac{\pi^2}{{n_x}^2}}}\right). \tag{2}$$

Where $x = 1$denotes the starting yin orbit being halvedinto yang orbits. If the resulting yang orbits take over the role of yin orbits and continue to be halvedfurther to yang orbits the orbit length $n_x$decreasesas the number of steps $x$increases:

$$n_x = \frac{n_1}{2^{x-1}}. \tag{3a}$$

All the way to the zero value$n_\infty = 0$, reached inaninfinitestep. Thus:

$$n_\infty = \frac{n_1}{2^{\infty-1}} = 0. \tag{3b}$$

The orbit n_x is taken to be stable if its doubled orbit length $2n_x$, expressed in Compton wavelengthsof the electron, is a natural number$2n_x \in \mathbb{N}$.

The required input of energy for anyyin-yang orbit transformation at all steps remains finite. Let's find outhow much finite it is in an infinite step.

2. Energy of Orbit Halving at the Infinite Step

Applying $Ry = 13.605\,693\,009\,eV$ as well as $\alpha^{-1} = 137.035\,999\,146$ for $n_\infty = 0$it holds (See appendix):

$$\Delta E_{forming}\,(n_\infty) = Ry.\alpha^{-1}\left(-\frac{1}{s\left(\frac{n_\infty}{2}\right)} - \left(-\frac{1}{\frac{s(n_\infty)}{2}}\right)\right) = \frac{Ry.\alpha^{-1}}{4\pi} = 148.369\,787\,330\,eV. \tag{4}$$

This energy is needed for the yin to yang transformation at the infinite step of orbit halving.

3. CONSEQUENCES

If the orbitsarehalvedas proposed above the boundless energy could be stored in small place. For instance, even in one molecule of hydrogen. Let's take a look.

4. HALVING SUBTLE ORBIT OF HYDROGEN MOLECULE

Halving characteristicsof hydrogen molecule subtle orbitsare presented in Table1.

Table1. *Halving characteristics of hydrogen molecule subtle orbits*

Step x	Halving orbit length (λ_e) $\mathbf{2^{x-1}} . \boldsymbol{n_x} \rightarrow 2^{x-1} . \frac{\boldsymbol{n_x}}{\mathbf{2}}$	Energy forhalving theorbit ΔE_x (eV)	Energy for one step $2^{x-1}\Delta E_x$ (eV)	Energyfor all steps $\sum_{x=1}^{x} 2^{x-1}\Delta E_x$ (eV)
1	$\mathbf{96\ \lambda_e} \rightarrow 2\ x\ \mathbf{48\lambda_e}$**(stable)**	**0,062**	**0,062**	**0,062**
2	$2\ x\ \mathbf{48\ \lambda_e} \rightarrow 4\ x\ \mathbf{24\lambda_e}$**(stable)**	0,486	0,972	1,034
3	$4\ x\ \mathbf{24\ \lambda_e} \rightarrow 8\ x\ \mathbf{12\lambda_e}$**(stable)**	3,602	14,410	15,444
4	$8\ x\ \mathbf{12\lambda_e} \rightarrow 16\ x\ \mathbf{6\lambda_e}$**(stable)**	22,011	176,092	191,535
5	$16\ x\ \mathbf{6\ \lambda_e} \rightarrow 32\ x\ \mathbf{3\lambda_e}$**(stable)**	83,200	1331,194	1522,730
6	$32\ x\ \mathbf{3\ \lambda_e} \rightarrow 64\ x\ \mathbf{1.5\ \lambda_e}$ **(stable)**	86,344	2763,014	4285,743
7	$64\ x\ \mathbf{1.5\ \lambda_e} \rightarrow 128\ x\ \mathbf{0.75\ \lambda_e}$**(unstable)**	**178,042**	11394,693	15680,436
8	$128\ x\ \mathbf{0.75\ \lambda_e} \rightarrow 256\ x\ \mathbf{0.375\ \lambda_e}$ **(unstable)**	169,936	21751,868	37432,305
9	$256\ x\ \mathbf{0.375\ \lambda_e} \rightarrow 512\ x\ \mathbf{0.1875\ \lambda_e}$**(unstable)**	160,556	41102,300	78534,605
…	…	…	…	…
∞	$\infty\ x\ \mathbf{0\ \lambda_e} \rightarrow \infty\ x\ \mathbf{0\ \lambda_e}$	**148.370**	∞	∞

1) At the first step $x = 1$, the stable subtle orbit (yin orbit) between hydrogen atoms of elliptic length $n_1 = 96\ \lambda_e$is divided to two equal stable orbits (yang orbits) of elliptic length$\frac{n_1}{2} = 48\ \lambda_e$.The stored energyforone transformed orbit is 0.062 eV,which is both the energy of the entire step and also the total energy.

2) At the second step $x = 2$, two equal stable yin orbits of elliptic length$\frac{n_1}{2} = 48\ \lambda_e$are divided to four equal yang orbits of elliptic length$\frac{n_1}{4} = 24\ \lambda_e$. The stored energy for one orbit is 0.486 eV, the energy for second step is 0.972 eV, and the energy for both steps is 1.034 eV.

3) At the third step $x = 3$, four equal stable yin orbits of elliptic length$\frac{n_1}{4} = 24\ \lambda_e$are divided to eight equal stable yang orbits of elliptic length$\frac{n_1}{8} = 12\ \lambda_e$.The stored energy for one transformedorbit is3.602 eV, the energy for third step is 14.410 eV, and the energy for all steps is 15.444 eV.

4)At the fourth step $x = 4$, eight equal stable yin orbits of elliptic length$\frac{n_1}{8} = 12\ \lambda_e$are divided to sixteen equal stable yang orbits of elliptic length$\frac{n_1}{16} = 6\ \lambda_e$. The stored energy for one transformedorbit is 22.011 eV, the energy for fourth step is 176.092 eV, and the energy for all steps is 191.535 eV.

5) At the fifth step $x = 5$,sixteen equal stable yin orbits of elliptic length$\frac{n_1}{16} = 6\ \lambda_e$are divided to thirty-two equal stable yang orbits of ellipticlength $\frac{n_1}{32} = 3\ \lambda_e$. The stored energy for onetransformed orbit is 83.200 eV, the energy for fifth step is 1331.194 eV, and the energy for all steps is 1522.730 eV.

6) And at the sixth step $x = 6$, thirty-two equal stable yin orbits of elliptic length$\frac{n_1}{32} = 3\ \lambda_e$are divided to sixty-four equal stable yang orbits of elliptic length $\frac{n_1}{64} = 1.5\ \lambda_e$. The stored energy for one transformedorbit is 86.344 eV, the energy for sixth step is 2763.014 eV, and the energy for all steps is 4285.743 eV.

All six types of orbits mentionedabove are geometrically stable since their doubled length expressed in the Compton wave lengths of the electron is a natural number.Further halving is possible but brings geometrically unstable, i.e.: short-lived orbits with decreasing storage energy per transformed orbitranging from178,042 eV at seventh step to 148.370 eV atinfinite step.

5. Conclusion

Not infinite, just six steps are enough to store considerable yin-yang energy in a hydrogen molecule.

Dedication

To Yin Yang

Figure1.*Yin Yang[2]*

References

[1]Janez Špringer (2023) “Subtle Bond of Hydrogen Molecule “International Journal of Advanced Research in Physical Science (IJARPS) 10(12), pp.4-5, 2023.

[2]https://deephooponopono.com/hooponopono-the-dance-of-energy-divinity-and-love/

Appendix

We have deal with the next formula

$$K=\frac{\Delta E_{forming}}{Ry.\alpha^{-1}}=-\frac{1}{s\left(\frac{n}{2}\right)}-\left(-\frac{1}{\frac{s(n)}{2}}\right)=-\frac{1}{\frac{n}{2}\left(2-\frac{1}{\sqrt{1+\frac{4\pi^2}{n^2}}}\right)}+\frac{1}{\frac{n}{2}\left(2-\frac{1}{\sqrt{1+\frac{\pi^2}{n^2}}}\right)}. \quad (a)$$

Rearranging we have

$$\frac{Kn}{2}=\frac{\frac{1}{\sqrt{1+\frac{\pi^2}{n^2}}}-\frac{1}{\sqrt{1+\frac{4\pi^2}{n^2}}}}{4-2\frac{1}{\sqrt{1+\frac{\pi^2}{n^2}}}-2\frac{1}{\sqrt{1+\frac{4\pi^2}{n^2}}}+\frac{1}{\sqrt{1+\frac{4\pi^2}{n^2}}}\frac{1}{\sqrt{1+\frac{\pi^2}{n^2}}}}. \quad (b)$$

For a very small$n$ we can help ourselves with a simpler equation:

$$\frac{Kn}{2}\approx\frac{\frac{1}{\frac{\pi}{n}}-\frac{1}{\frac{2\pi}{n}}}{4-2\frac{1}{\frac{\pi}{n}}-2\frac{1}{\frac{2\pi}{n}}+\frac{1}{\frac{2\pi}{n}}\frac{1}{\frac{\pi}{n}}}. \quad (c)$$

It can be written implicitly as:

$$\frac{K}{2\pi^2}n^2-\frac{3K}{\pi}n+4K-\frac{1}{\pi}\approx 0. \quad (d)$$

Giving the value of Kat$n = 0$:

$$K = \frac{1}{4\pi}. \quad (e)$$

And the value of $\Delta E_{forming}$ at $n = 0$ since:

$$\frac{\Delta E_{forming}}{Ry.\alpha^{-1}} = K = \frac{1}{4\pi}. \quad (f)$$

So

$$\Delta E_{forming} = \frac{Ry.\alpha^{-1}}{4\pi}. \quad (g)$$

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