BIT Life Sciences' 3rd World Congress of Vaccine
Beijing·China

Session Name: Section 2-2-1: Bioinformatics, Antigen Design, and Vaccine Development

Decoding non-coding Dna Codes:

Human Genome

Meta-Chromosomes Architecture

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and **Jean-rené Fourtou** Vivendi Universal chairman

More on: http://golden-ratio-in-dna.blogspot.com/

CONTENTS:

- **Part I - BACKGROUND:**

- DNA supracode (1991-1997)

- Human genome Codon populations: Numbers and atomic weighs perfect balancing (2004-2009)

- **Part II - RESULTS:**

- Whole Human Genome Codon Populations reveals central rôle of « Phi » the « Golden ratio » J.C. Perez - Interdiscip Sci Comput Life Sci (2010) 2: 1–13 DOI: 10.1007/s12539-010-0022-0« Codon Populations in Single-stranded Whole Human Genome DNA Are Fractal and Fine-tuned by the Golden Ratio 1.618 » (2010)

- Proof of a Functional Human Chromosomes Meta-structure involving « Pi » and « Phi » Universal Constants (2010).

- **Part III - FUTURES:**

- The great Unification: Unifying DNA, RNA and Amino acid worlds from bioatoms to whole Genomes: Binary Code and Waveforms in DNA... *« Is there an Equation for Life »?* (1997-2003)

- Perspectives in Luc Montagnier's *« DNA Waves and Water »* breakthrough Luc Montagnier ,Lindau NOBELS conference, 28 June, 2010 - DNA BETWEEN PHYSICS AND BIOLOGY: « DNA WAVES AND WATER » (2011).

$$\text{Proj (m)} = \left[\, 1 - \left[\, 4\pi\sqrt{\varphi\varphi\varphi^2} \, \right] \, \right] m$$
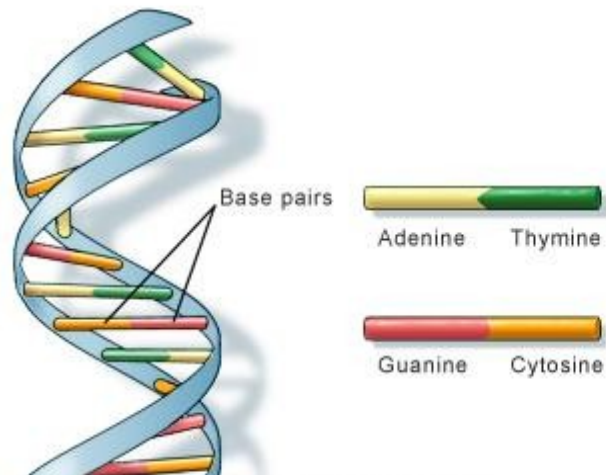
with: $\quad \sqrt{\varphi} = 1/\sqrt{\Phi} \qquad Phi \quad$ is the GOLDEN RATIO $\quad \Phi$

$\qquad\qquad \varphi = 1/\Phi$

$\qquad\qquad \varphi^2 = 1/\Phi^2$

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« Why are there Numbers in the Nature? »
Alan Turing… **The Chemical Basis of Morphogenesis** A. M. Turing

1 2 3 4… Pi… Phi…

Base pairs
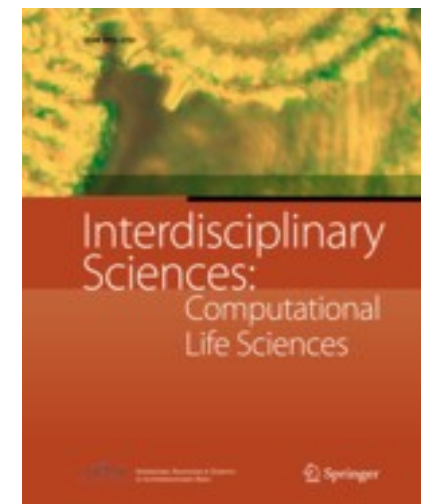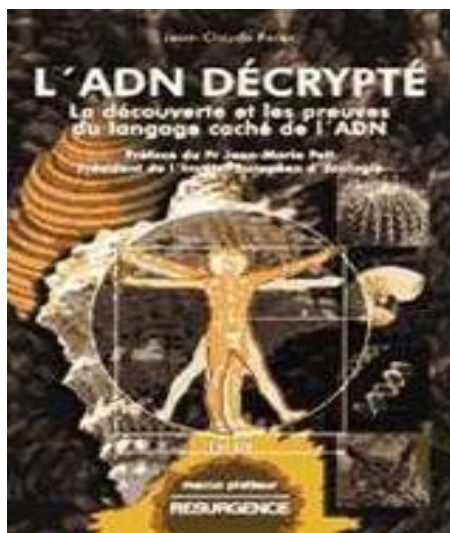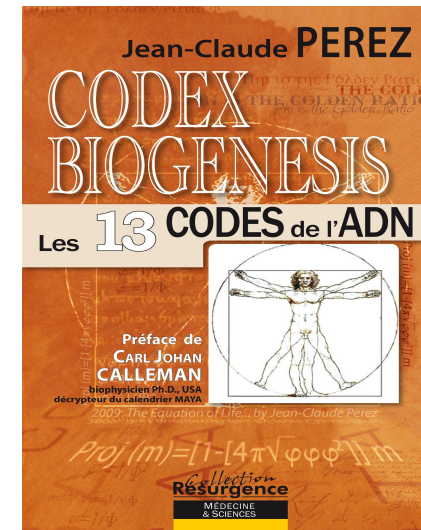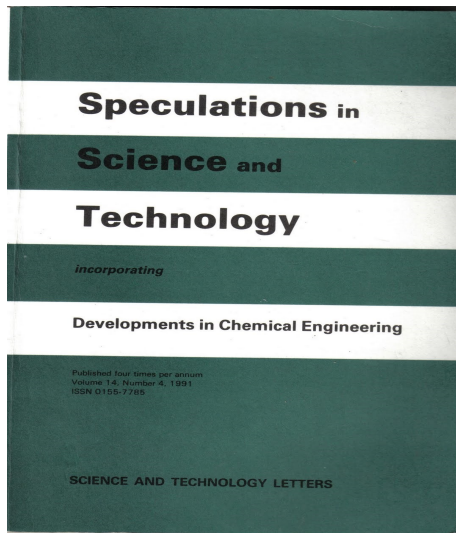
Adenine   Thymine

Guanine   Cytosine

Numbers...
Codes...
Atomic
Weights...
Waves...

90% of this conference contents provide from 2 publications (1991 and 2010) and from 2 french books (1997 and 2009)...

1991 and 1997...   **2009 and 2010...**

2010: Eric Lander (Science Adviser to the President and Director of Broad Institute) et al. Published a ***FRACTAL structure of DNA at a PHYSICAL LEVEL*** and delivered this message on Science Magazine coversheet (Oct. 9, 2009) to the effect:
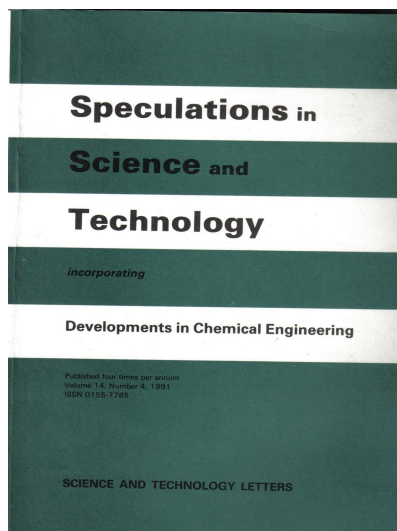
"Mr. President; The Genome is Fractal ! »

In 1991 – about 20 years ago – we published « DNA supracode »

In 1991 (1) then in 1997 (2), ***we proposed a FRACTAL structure od genes-coding DNA at a LOGICAL LEVEL...***

Ref 1: J.C. Perez - "Chaos DNA and Neuro-computers : a golden link / The hidden language of genes, global language and ordre in the human genome", in Speculations in Science and Technology, vol 14 number 4 1991, ISSN 0155-7785.

Ref 2: Jean-claude Perez, L'ADN DECRYPTE (DNA DECODED), (1997) Marco Pietteur publishing (Resurgence collection) Embourg Belgium, ISBN 2-87211-017-8 (in french)

> Science The World's Leading Journal
> Home > Science Magazine > 9 October 2009 > About the Cover
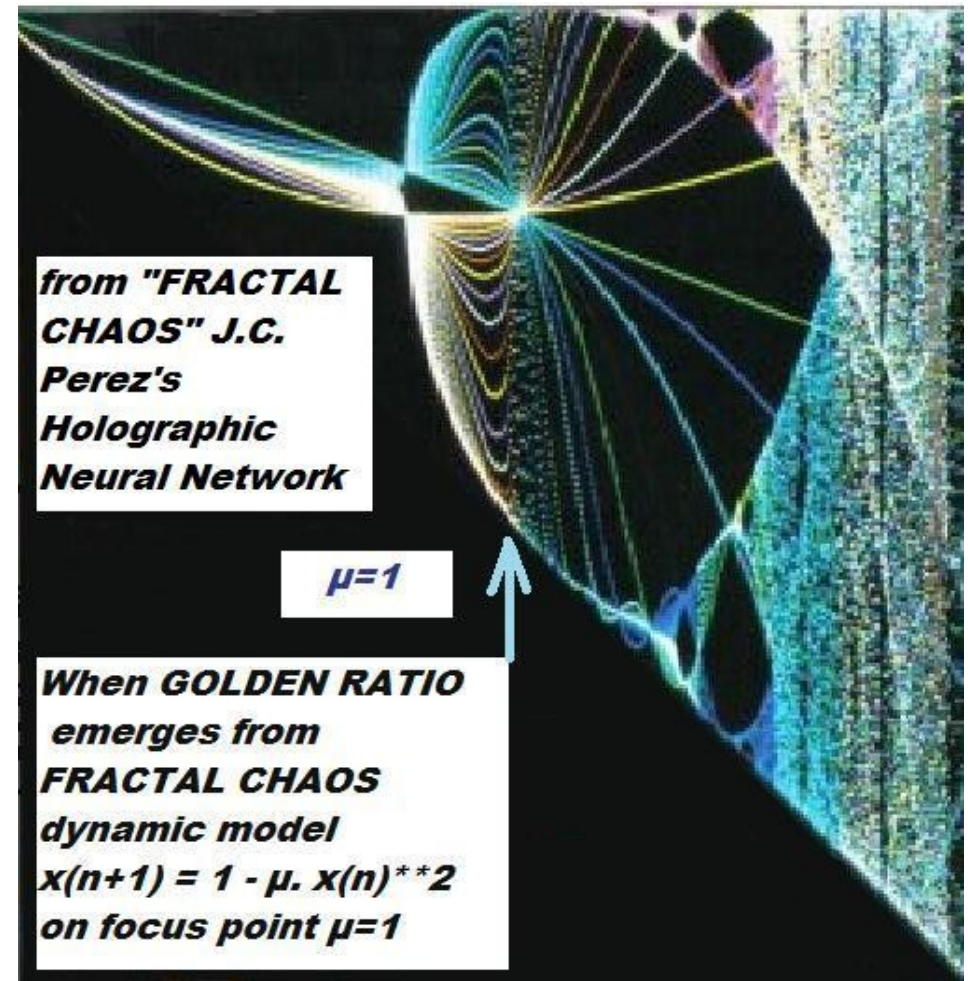>
> **Science**
>
> [FRACTAL DNA] AAAS
>
> First described by David Hilbert in 1891, the Hilbert curve is a one-dimensional fractal trajectory that densely fills higher-dimensional space without crossing itself.

Speculations in Science and Technology

incorporating

Developments in Chemical Engineering

SCIENCE AND TECHNOLOGY LETTERS

L'ADN DÉCRYPTÉ

DNA supracode genesis:
- 1 - Working on neuro-computers we discovered an hypersensitivity of FRACTALS aroung the GOLDEN RATIO area (with Golden ratio Phi=1.618033... as 1/Phi = 1+Phi).
-2- FIBONACCI numbers ratios are GOLDEN RATIO like proportions!
-3- Then we think: « *what about FIBONACCI numbers nucleotides proportions in DNA sequences?* »
-4- a **« resonance »** is by example: 55 T and 89 CAG in 144 bases TACG.

- In 1991 we proposed that Golden Ratio and Fibonacci/Lucas integer numbers define strong relationships between DNA gene-coding region sequences and Fibonacci's embedded TCAG gene sequence patterns. We also prove the optimality of these patterns in the book L'ADN décrypté ("Deciphering DNA").

- Examples involving evolution and pathogen analysis include genes or small gene-rich genomes, especially the HIV genome. This book explores a numerical property called the "DNA Supracode" consisting of exhaustive combinatorial research of "resonances" within gene-coding DNA sequences: a resonance is a harmonious proportion of exact Fibonacci/Lucas nucleotide numbers. For example: 144 contiguous TCAG nucleotides have exactly 55 T nucleotides and 89 A or C or G nucleotides. Then a resonance exists with an the Golden ratio: 55, 89 and 144 are consecutive Fibonacci numbers following the Golden Ratio. Gene-rich genomes like HIV have thousands of "resonances", where the longer ones overlap 2/3rds of the whole genome length.

from "FRACTAL CHAOS" J.C. Perez's Holographic Neural Network

$\mu=1$

When GOLDEN RATIO emerges from FRACTAL CHAOS dynamic model $x(n+1) = 1 - \mu \cdot x(n)^{**}2$ on focus point $\mu=1$

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DNA supracode and Fibonacci serie: 1 1 2 3 5 8 13 21 34 55 89...
Example of resonances in HUMC1A1 gene