RECENT OBSERVATIONS AND HYPOTHESES ON BIOELECTROMAGNETIC INTERACTIONS AIR POLLUTION AND AIR IONS THE 'FREE RADICALS' OF THE ATMOSPHERE

PRELIMINARY MEASURES ON THE EFFECTS OF ARTIFICIAL ELECTROMAGNETIC FIELDS ON HUMAN HEALTH AND PLANTS. The Poli project.

https://conference.cfuv.ru/conference/biospace/

https://www.vglobale.it/?s=COSMO+E+BIOSFERA

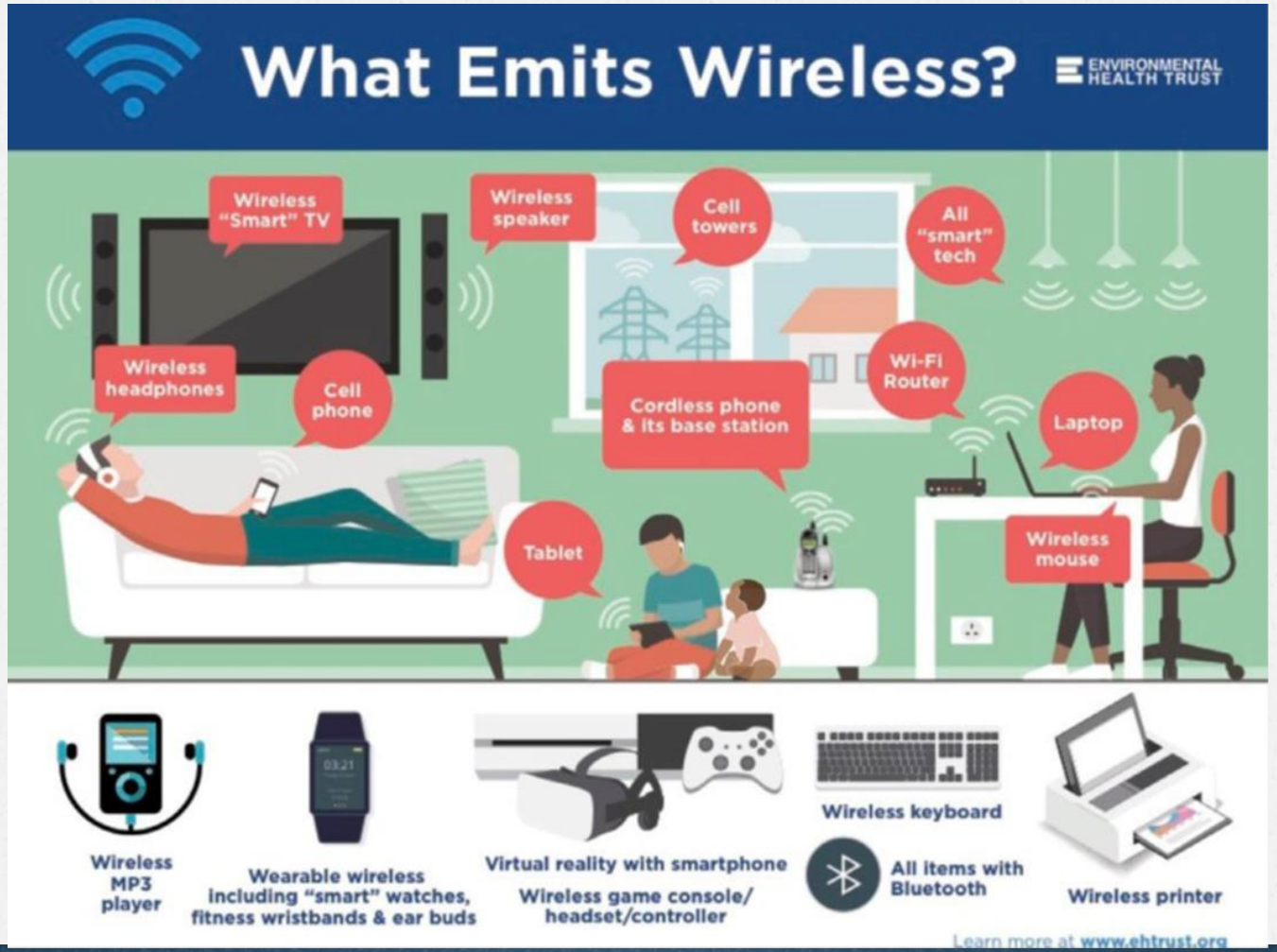
Mauro Santilli, Vincenzo. I. Valenzi, *Massimo Sperini, Francesca Pulcini, Adrian Cerba, Alessandro La Prova, Fabio Del Frate, Andrea Di Chiara, Lorenzo Di Chiara, Luigi Campanella, Pasquale Avino, Odoardo M. Calamai,*

Bioelectromagnetism (BEM) is the discipline that studies and describes the interactions between electromagnetic fields (EMF), both natural and artificial, with living systems.

In the last century, the only sources of EMF were natural: the Earth's electric and magnetic fields, the electromagnetic fields produced by thunderstorms (especially lightning), concentrations of small negative and positive ions in the atmosphere (clusters of O_2^- and N_2^+, and water), and the very weak fields associated with the sun and galaxies. These sources constitute the natural electromagnetic background, or environment, in which living organisms evolved

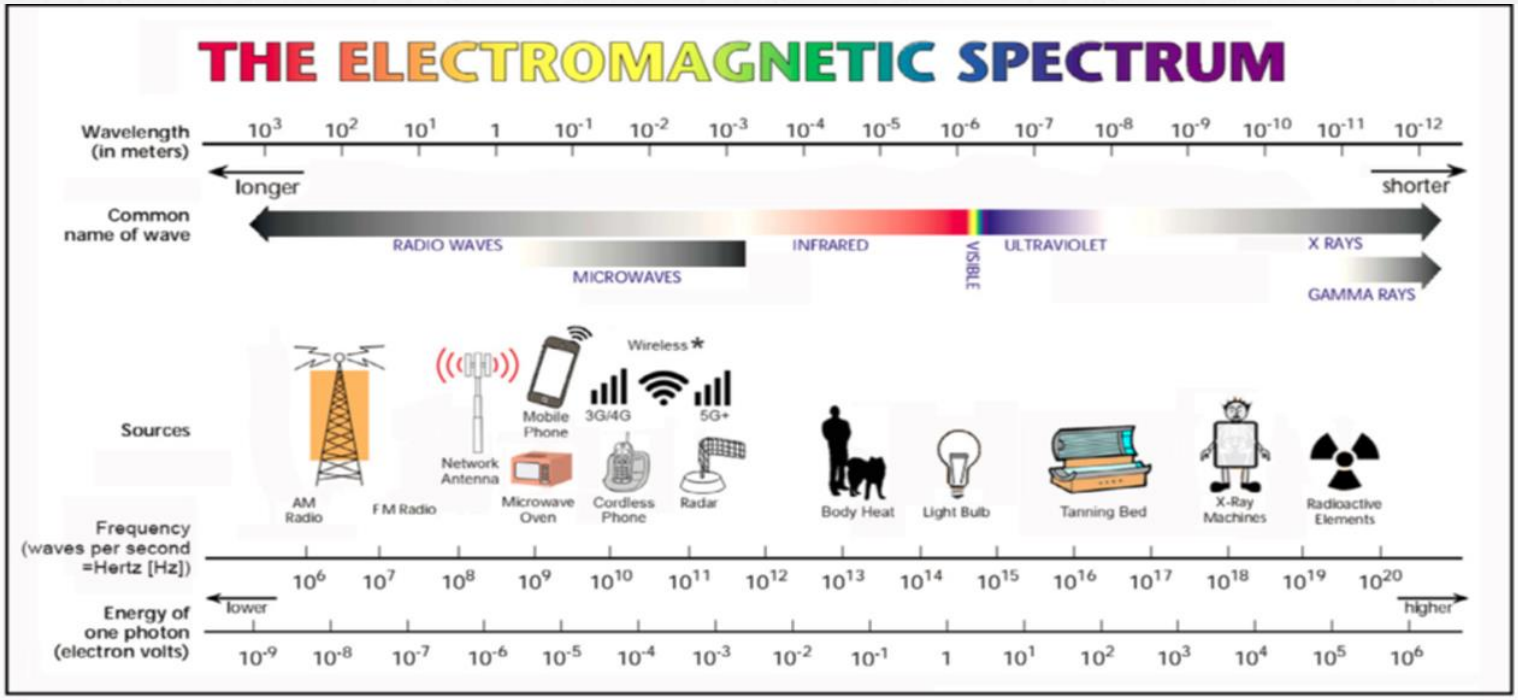
Over the past hundred years, exposure to artificial EMFs (produced by radio and television broadcasts, radar, cell phones, power lines, household appliances, etc.) has increased significantly in industrialized countries. This has led to a profound alteration of the electromagnetic environment.

Wireless devices we have in our homes



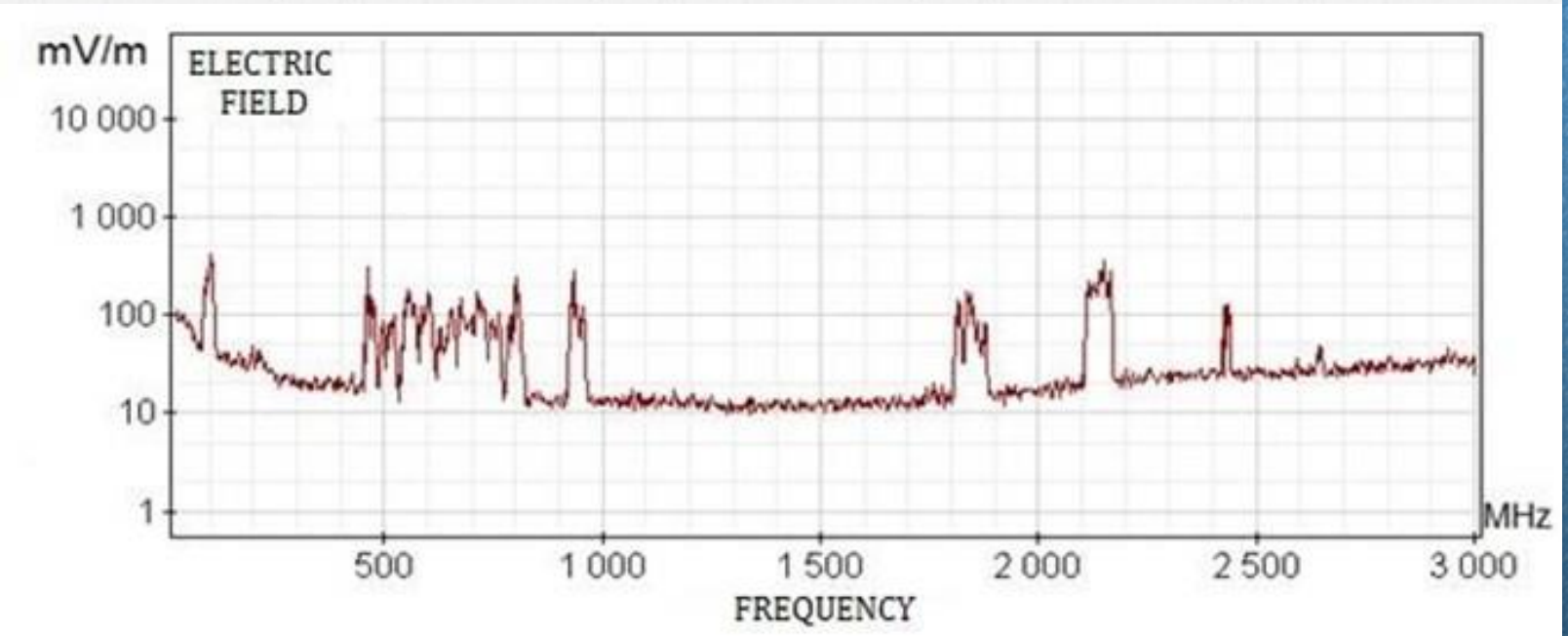
Wireless devices we have in our homes

Certain categories of workers and the general population are exposed to electromagnetic radiation and artificial fields, which have an average intensity several orders of magnitude greater than natural fields. Measurements indicate values of artificial EMFs from thousands to millions of times those of natural fields. For this reason, in certain situations, we now speak of electromagnetic pollution or environmental electro-smog.



The presence of artificial fields has progressively and continuously invaded the entire electromagnetic spectrum, at least up to 3 GHz, justifying the concept of "electromagnetic pollution", or "electrosmog", and producing a situation like the one represented in Figure 1.

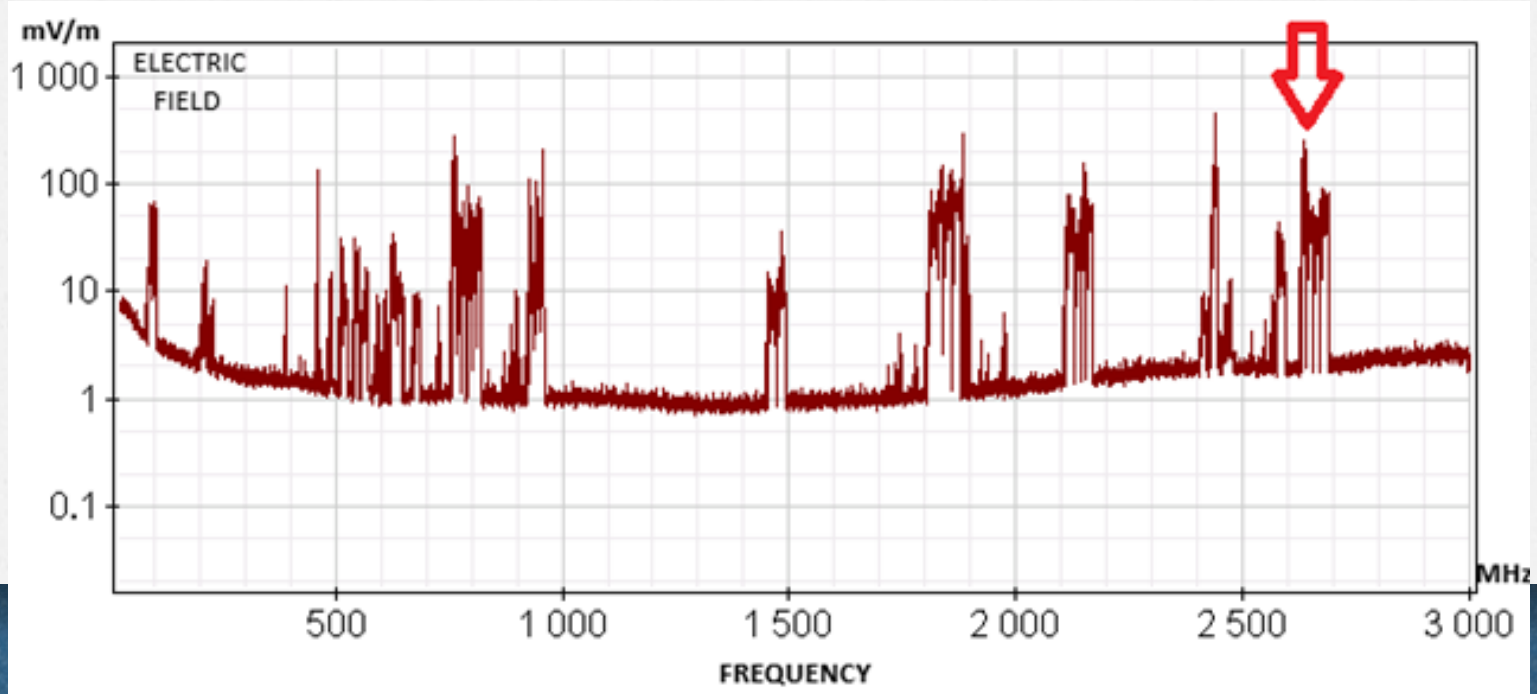
Figure 1: 2018 - The spectrum, measured in an open-air environment in an area of Rome (Cinecittà Est), extends from 26 MHz to 3 GHz. The first peak on the left indicates FM radio broadcasts. Digital TV broadcasts begin immediately after the 400 MHz frequency. GSM telephony is found around 900 MHz and 1.9 GHz, and the peak centered at 2.2 GHz is due to emissions from the UMTS system.



In Italy, following the 2019 pandemic, there has been increasingly widespread environmental exposure to wireless transmissions with frequencies above2.5 GHz; Figure 2. At the same time, the level of chemical pollutants has also increased dramatically.

Figure 2: 2025 - The spectrum, measured in an open-air environment in an area of Rome (Centocelle), extends from 26 MHz to 3 GHz. The first peak on the left indicates FM radio broadcasts and the second digital radio (DAB - Digital Audio Broadcasting). Digital TV broadcasts begin immediately after the 400 MHz frequency. Near 1.4 GHz is a Wi-Fi band. GSM telephony is found around 900 MHz and 1.9 GHz, and the peak centered at 2.2 GHz is due to emissions from the UMTS system. Around 2.4 GHz is another Wi-Fi band. The red arrow indicates the frequencies around 2.6 and 2.7 GHz. These frequencies are used for wireless data transmission, primarily in Wi-Fi networks and 5G cellular technologies.

These frequencies offer an alternative to the better-known 2.4 GHz and 5 GHz bands.



Many studies highlight the adverse effects of these electromagnetic fields on the climate and the health of humans, plants, animals, and especially insects

BÄUME IN HALLSTADT (2008-2018)

7 Studie Nr. 14, Spitzahorn, Königshofstraße/Friedhof (2008-2018)

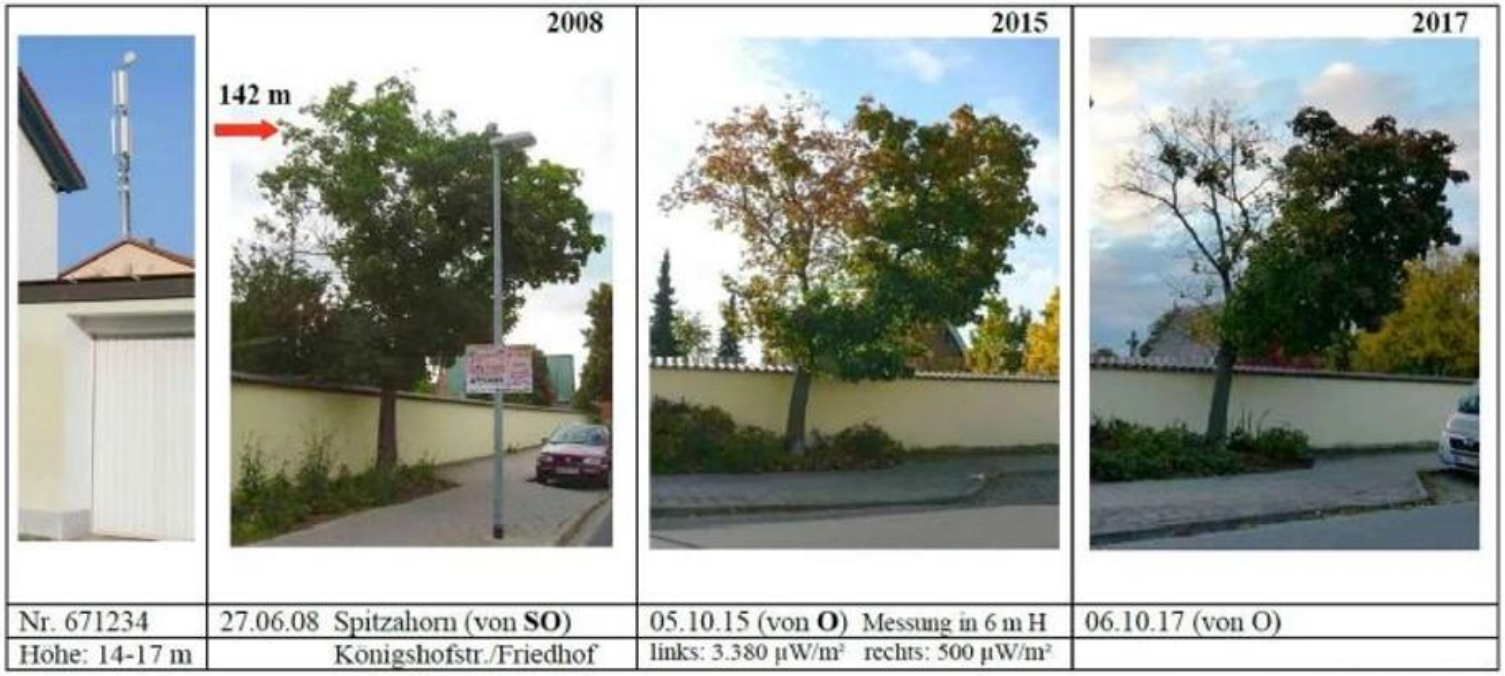
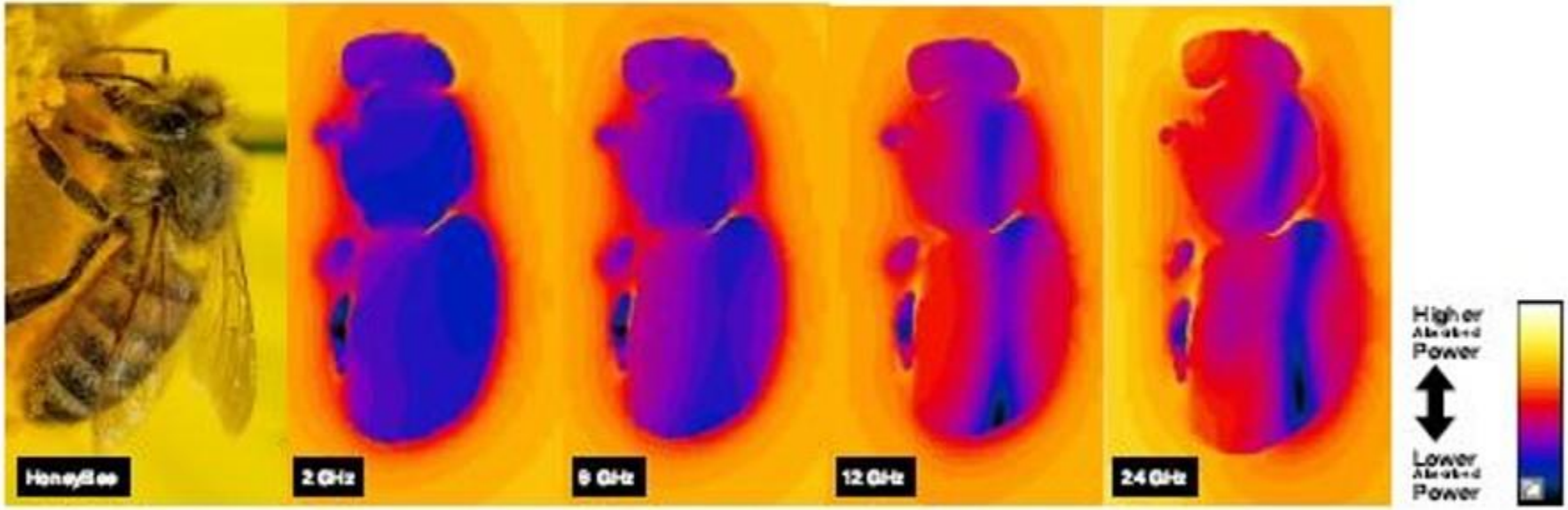


Image Used with Permission: Cornelia Waldmann-Selsam - Kompetenzinitiative

5G's Higher Frequencies Increase Honeybee Exposure

Research Finds Higher Radiation Absorption Into Brain and Vital Organs



Honeybee Exposure to Wireless: Lighter Color Equals Higher Absorbed Power

Image "Exposure of Insects to Radio-Frequency Electromagnetic Fields From 2 to 120 GHz" Scientific Reports by T Halenar et al. (2019)

Wireless Repels Honey Bees

After 10 minutes of cell phone radiation. daily for 10 days worker bees did not return to test colonies.

3 Hives Exposed

3 Hives Controls

Sainudeen Sahib S, Electromagnetic Radiation (EMR) Clashes with Honey Bees, INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES Volume 1, No 5, 2011

Effects of EMF on humans

In addition to the main non-thermal effects of EMF, summarized below:

- effects on growing cells, with a particular increase in the proliferation rate of cancer cells;
- increased incidence of certain forms of cancer;
- development of abnormalities in embryos;
- alterations of nervous system chemicals, such as calcium ion concentrations;
- alterations of biological cycles;
- decreased immune system efficiency;
- alterations in learning ability;
- hypersensitivity to electromagnetic radiation.

we indicate recent effects of social relevance ...

Save the girls

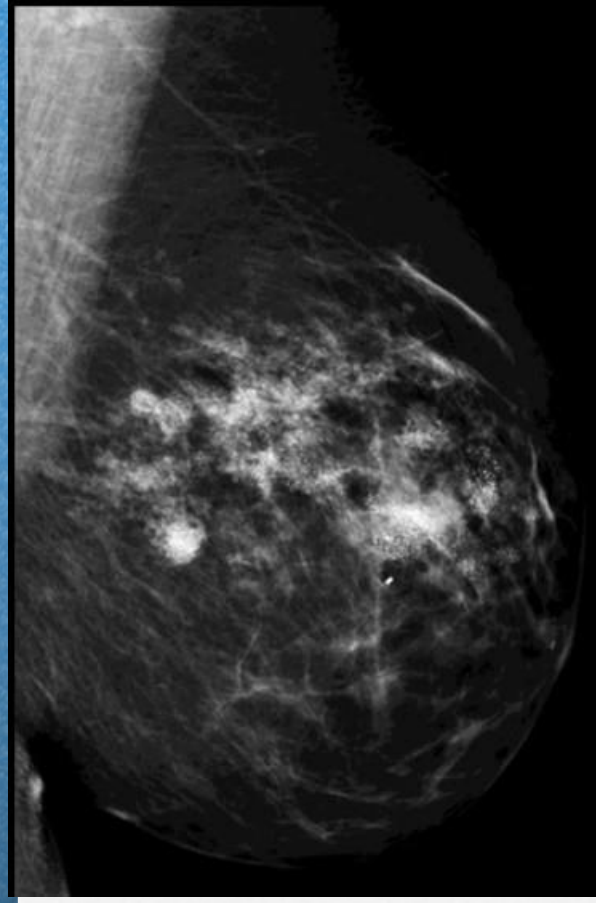
Doctors warn that unusual breast cancers are occurring in women who stored cell phones in their bras.

#SaveTheGirls

ENVIRONMENTAL HEALTH TRUST

www.ehtrust.org

Caveat - first case report, 2009

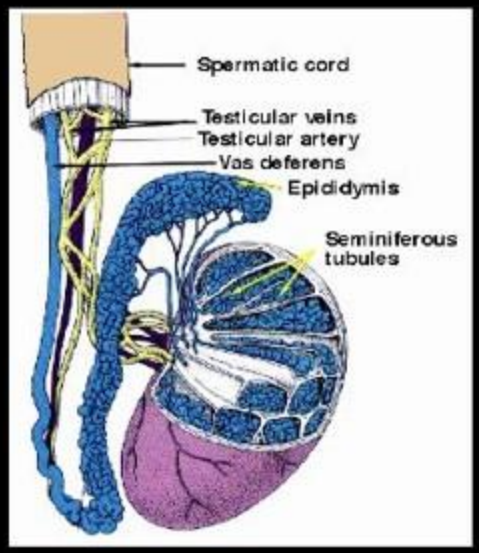


Invasive multiple primary tumors in 34 year old, avid runner Chinese-American woman who used cell phone 4 hours a day in her bra for 10 years

—reported by Robert Nagourney, MD, PhD

Heavier cell phone users have reduced sperm count

Sperm count



Ashok Agarwal MD PhD, Cleveland Clinic, 2008; and seven other studies

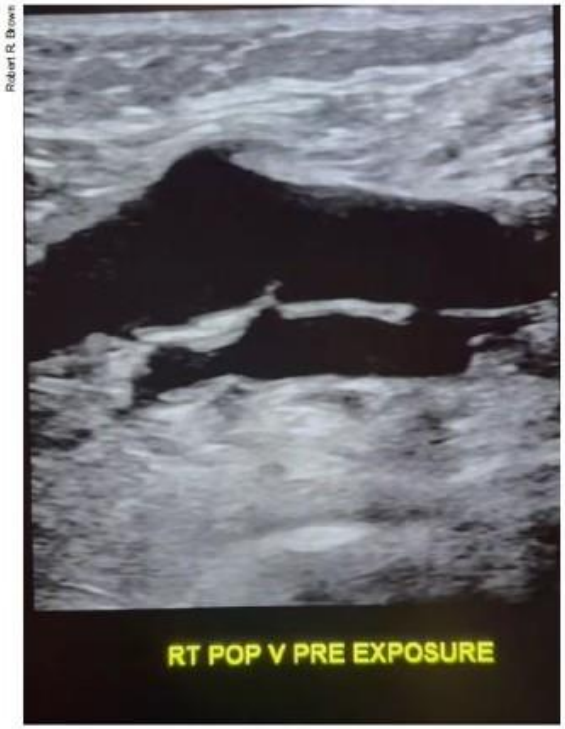
Your future is in your hands

Medical experts are warning men not to keep their mobile phones in their pockets as this can have a direct effect on their fertility.

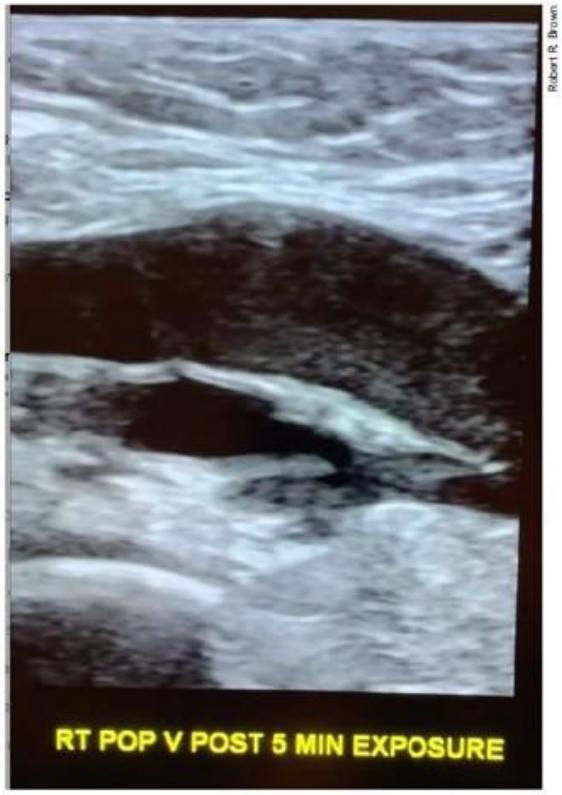
EMF RADIATION RESEARCH TRUST

SAVE THE MALE

2025 - Hypothesis: ultrasonography can document dynamic in vivo rouleaux formation due to mobile phone exposure



BEFORE - Pre-exposure there is no evidence of rouleaux in the vein.



AFTER - Post-exposure there is evidence of rouleaux with numerous white dots filling the vein.

forth on the postexposure video, resembling a spotlight illuminating a gusty snowstorm at night, represent large aggregates

Electromagnetic Pollution and Atmospheric Ions

The presence of artificial EMFs also changes the concentration of small ions. Furthermore, chemical pollutants have reduced or replaced small natural ions with large ions. The latter are harmful to health. One of the key arguments supporting this claim is the verified emergence of physiological disturbances when the concentration of small ions is sensibly falling. In any case, if one wishes to testify to that association, it becomes a priority to carry out reliable measurements of the characteristics of the air ions of a given place internal or external, and collect statistically significant data. A second step is to understand what the threshold, if any, is for the ion concentration of the air below which disturbances arise. Finally, try to give the onset of disturbances a verifiable quantification through measures that, it is easy to predict, would require a very high sensitivity.

The Poli project

This project on Environmental Health is dedicated to the memory of Professor Massimo Scalia (1943-2023). An initial attempt to highlight the "Therapeutic Climate of Poli" was made with the conference of November 30, 2019, and in an initial measurement campaign conducted in early 2020.
https://www.comune.poli.rm.it/c058078/po/mostra_news.php?id=276&area=H

The Poli project

To provide a picture of the environmental health of the area under investigation—the Poli area—the following initial steps in data collection and analysis are identified:

An electromagnetic characterization of the environment, aimed at monitoring exposure levels to electromagnetic fields according to the mapping method of the examined areas.

The purpose of environmental electromagnetic monitoring is to determine the emission levels of low-frequency (0-100 kHz) and high-frequency (100 kHz-300 GHz) electric and magnetic fields that can be generated by the electricity distribution and utilization system, radio and television broadcasting systems, cellular telephone systems, and civilian and military radar.

The data collected will allow for the electromagnetic description and characterization of the monitored area and comparison with natural electromagnetic field values.

Instruments for measuring field intensity

The instrument mainly used for measuring artificial electromagnetic fields is PMM 8053B, which is a versatile and expandable system, with EHP-50C PROBE and EP 745 PROBE, suitable for measuring the intensity of fields - electric, magnetic and electromagnetic - as a function of frequency, both in a confined and outdoor environment;

Instruments for measuring field intensity

PMM 8053 - EHP-50C PROBE

- ***Electric fields from 5 Hz to 100 kHz, minimum value 10 mV/m;***
- ***Magnetic fields from 5 Hz to 100 kHz, minimum value 10 nT;***
- ***Electromagnetic spectrum from 5 Hz to 100 kHz (minimum values 10 mV/m and 10 nT)***

Instruments for measuring field intensity

PMM 8053 - EP 745 PROBE

Electric field component of electromagnetic fields from 100 kHz - 7 GHz, minimum value 0.35 V/m

“Ionmeter” AIM-101 System Description

The “Ionmeter” AIM-101 thanks to the precise electronic and the mechanical design, allow to measure with accuracy the following quantities:

1. the concentration of the small positive and negative ions (n +, n-);

2. the conductivity of the air due to small ions;

3. the spectrum of mobility;

4. the size of the ions;

5. the conductivity of the air due to small and intermediate ions;

6. the net space charge density;

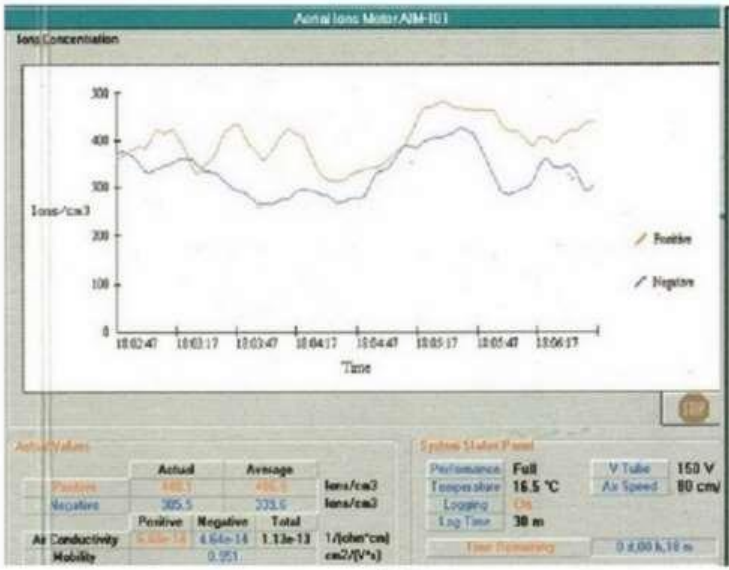
7. the local atmospheric electric field at 1 m above the ground.

This “Ionmeter” allows the simultaneous and real-time reading of the concentration of positive and negative ions with a measuring range that extends from 10 to 10^6 ions/cm^3 and, with a measurement error on all scales of ± 10 ions /cm^3.

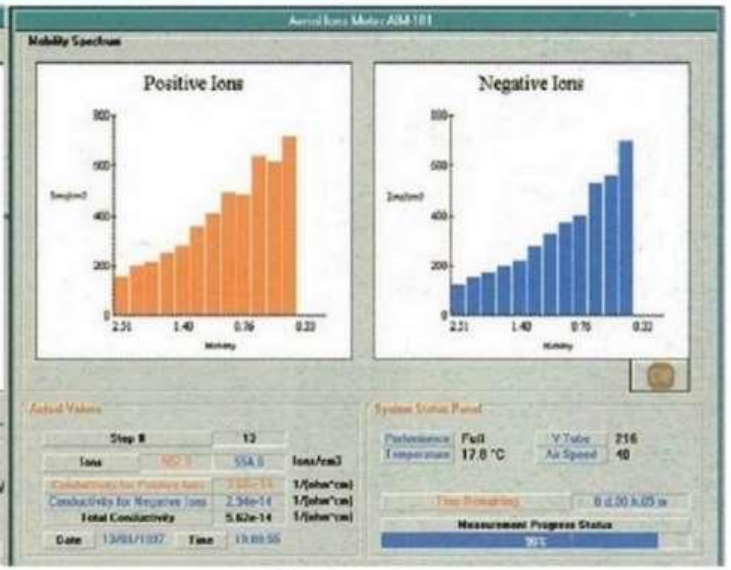
Ions are captured by two coaxial structure cylindrical transducers with gold plated electrodes. Two, power supplies with output voltage ranging from zero to 350 V provide the right, biasing of the transducers. Inside each transducer, a specific air flux is guaranteed by using a regulated speed fan, enabling the ions on the electrodes to be turned into voltage by two current/voltage converters based on amplifiers with extremely low bias current

“Ionmeter” AIM-101: a) “Ionmeter” for detecting air conductivity; b) concentration of the small positive and negative ions data is presented on the computer screen; c) Spectrum data is presented on the computer screen

a)



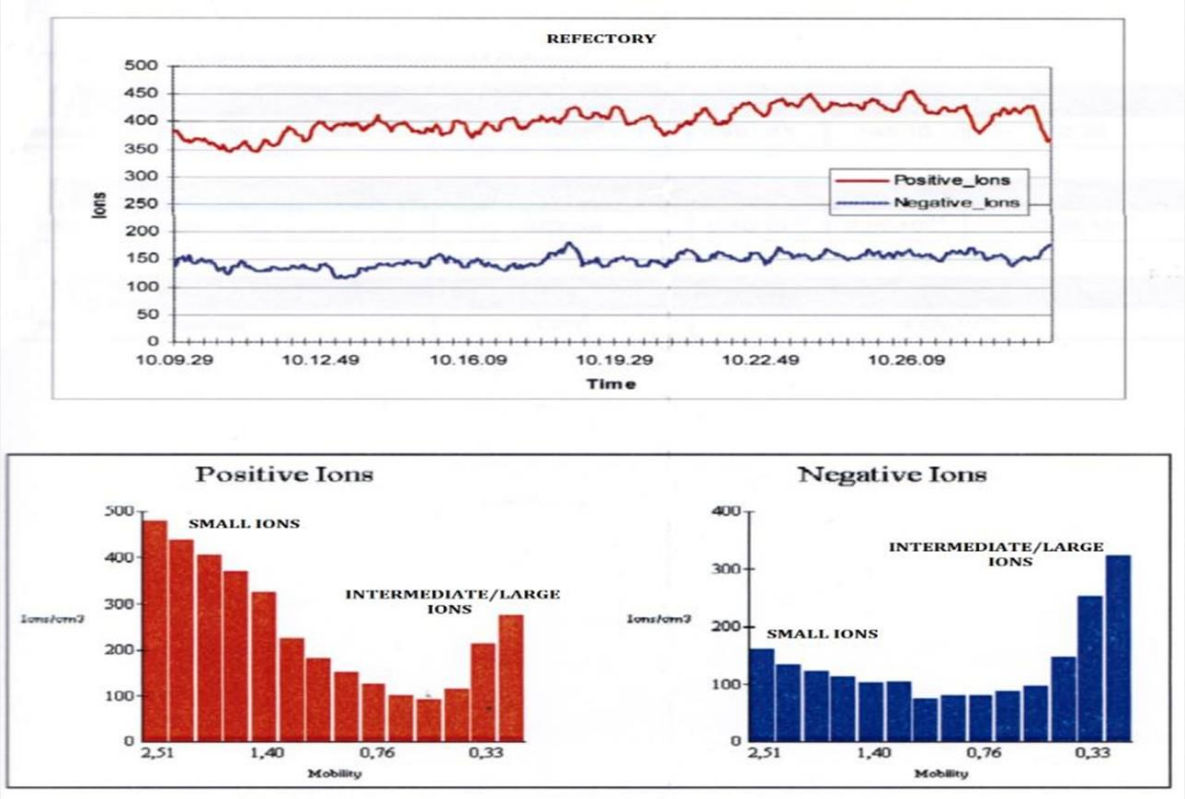
b)



c)

The presence of artificial EMFs also changes the concentration of small ions. At the "Leopardi" school in Rome, it can be observed that in the presence of a radiofrequency field, with an average value of 1.5 V/m, small positive ions predominate over negative ones.

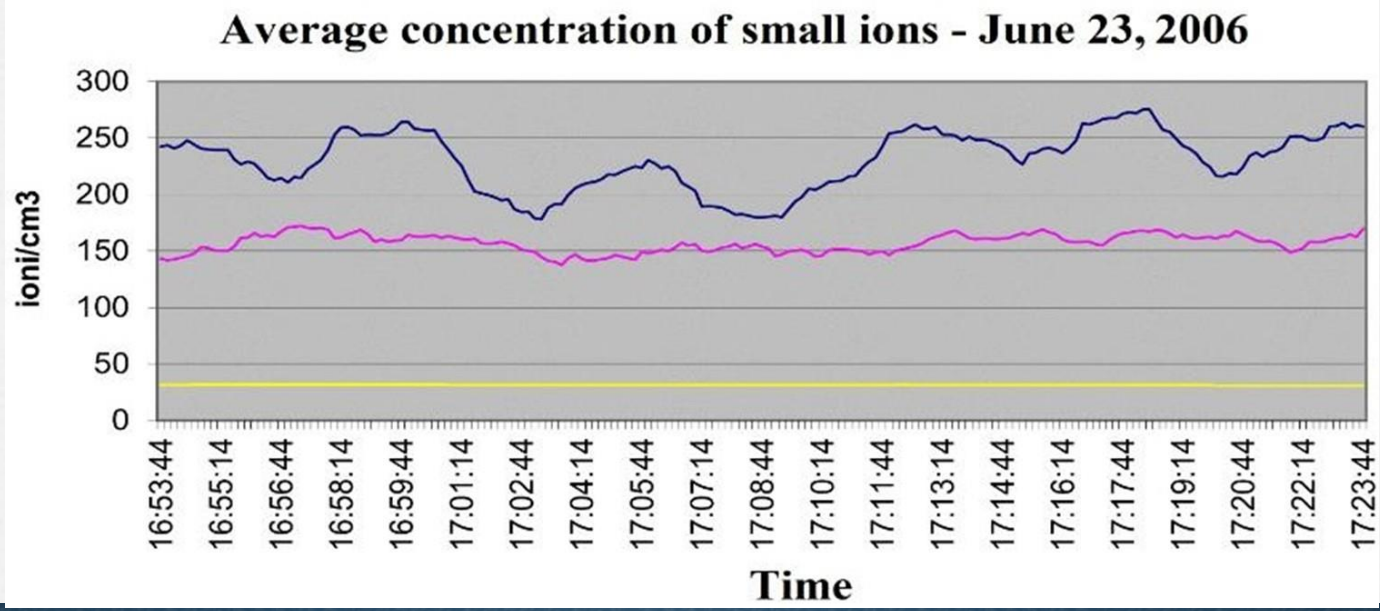
Figura: 1997 - a) Average concentration of small ions; b) Spectrum of air ions. Refectory. “Giacomo Leopardi” School.



In the absence of electromagnetic pollution, small negative ions prevail over positive ones.

The temporal trend of the concentration of air ions in the area where the municipality of Genazzano is located can be considered as typical of non-urban environments in good weather conditions, characteristic of healthy microclimates. In the graph it is possible to observe the lack of abrupt fluctuations in the ionic concentration and the predominance of negative ions (average ~ 200 ions/cm^3) compared to positive ions (average ~ 150 ions/cm^3).

Figura: 2006 - Average concentration of small ions - June 23, 2006 (negative ions in blue and positive ions in red). Genazzano, Italy.



Tab.I - Average concentration of small ions
"Casa dell'Aviatore", Rome. April 21, 2015

Place: Aviator's House		**Date**: April 21, 2015		
Parameter Average concentration of small ions	**Time** hour	**n^+** Ions/cm^3	**n^-** Ions/cm^3	**n^+/n^-**
Start of measurement	0	85,30	92,16	0,93
End of measurement	2	82,13	75,40	1,09

The Conference on Climate and Health was held on Tuesday 21 April 2015 at the Aviator's House in Rome. The Conference was organized by Dr. Vincenzo Valenzi of the Center for Biometeorology Studies. During the conference the concentration of the small air ions was measured with the "Ionmeter" (Fig., Tab.I). This synthetic measure of the concentration of small ions confirms previous observations, which indicate a decrease in the number of negative ions in confined air environments when many people are present.

RESEARCH HYPOTHESIS

Our working group, in addressing electromagnetic pollution, has proposed revolutionary ideas. The most important is the description of living beings not only through chemistry, but above all through electromagnetic forces.

Our bodies are essentially composed of ions (chlorine, sodium, potassium, etc.) and electrical dipoles (membrane proteins, enzymes, and the cell itself). Electrical dipoles and ions are extremely sensitive to electromagnetic fields.

Finally, living beings generate measurable endogenous EMFs.

For example, membrane proteins oscillate at frequencies ranging from 0.1 to 10 GHz, which is the frequency range in which cell phones, wireless networks, and microwave ovens (2.4 GHz) transmit and receive

RESEARCH HYPOTHESIS

Another hypothesis of great interest to our working group is the electromagnetic markers, including air ions, which could be assimilated to free radicals in the atmosphere, with their biological effects, including therapeutic ones, as demonstrated by the climatotherapy studies of Pietracupa.

The above hypotheses were tested by monitoring the electromagnetic environment and airborne ions in both low and high-polluted environments. The subsequent comparison with the values of natural fields and ions will allow us to study the impact of these two parameters on the environment in which we live. (Poli Project)

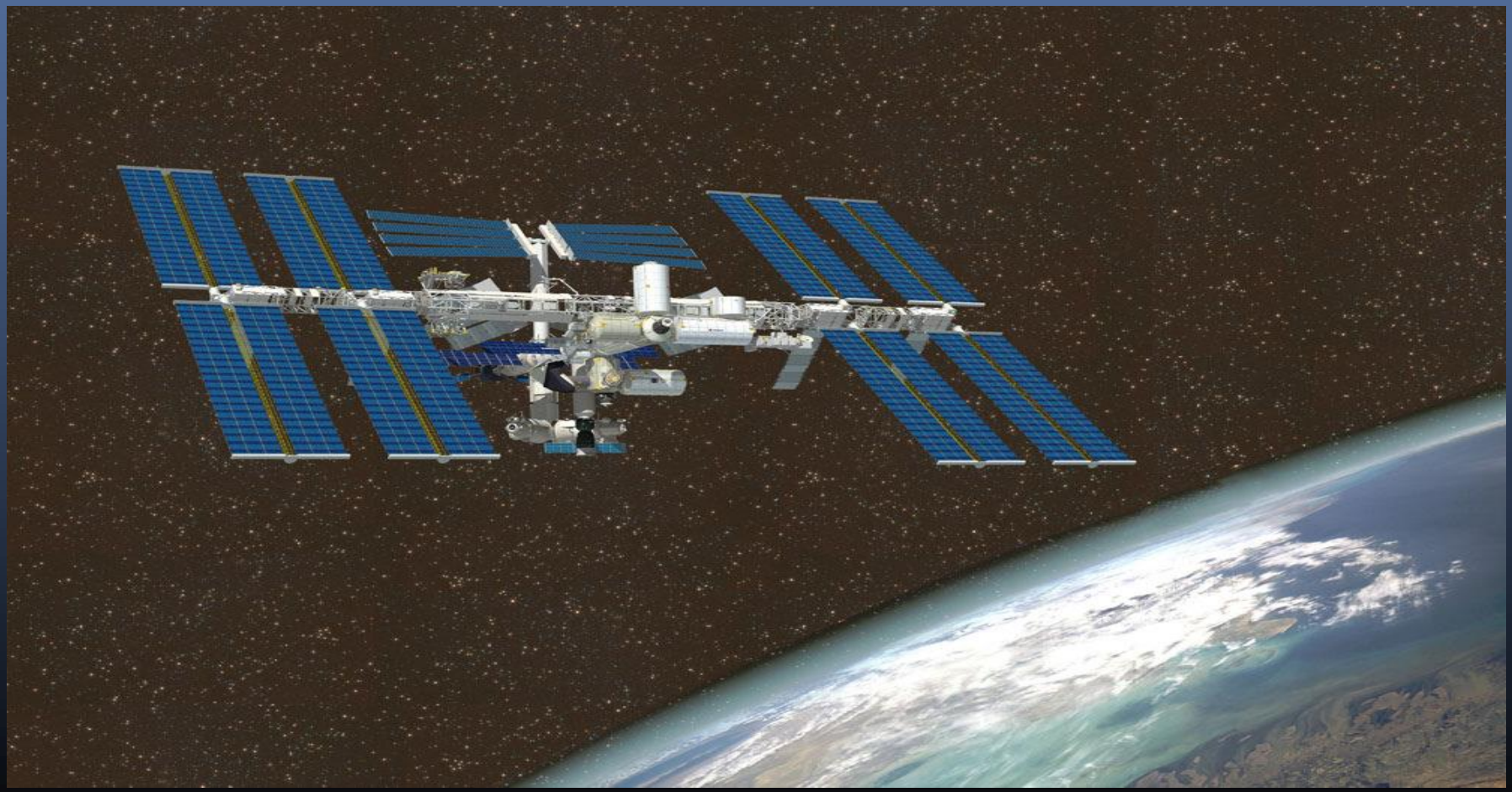
RESEARCH HYPOTHESIS

Testing these research hypotheses could explain the observed beneficial effects of negative airborne ions and healthy microclimates; as well as studies that correlate excess positive ions with the following events:

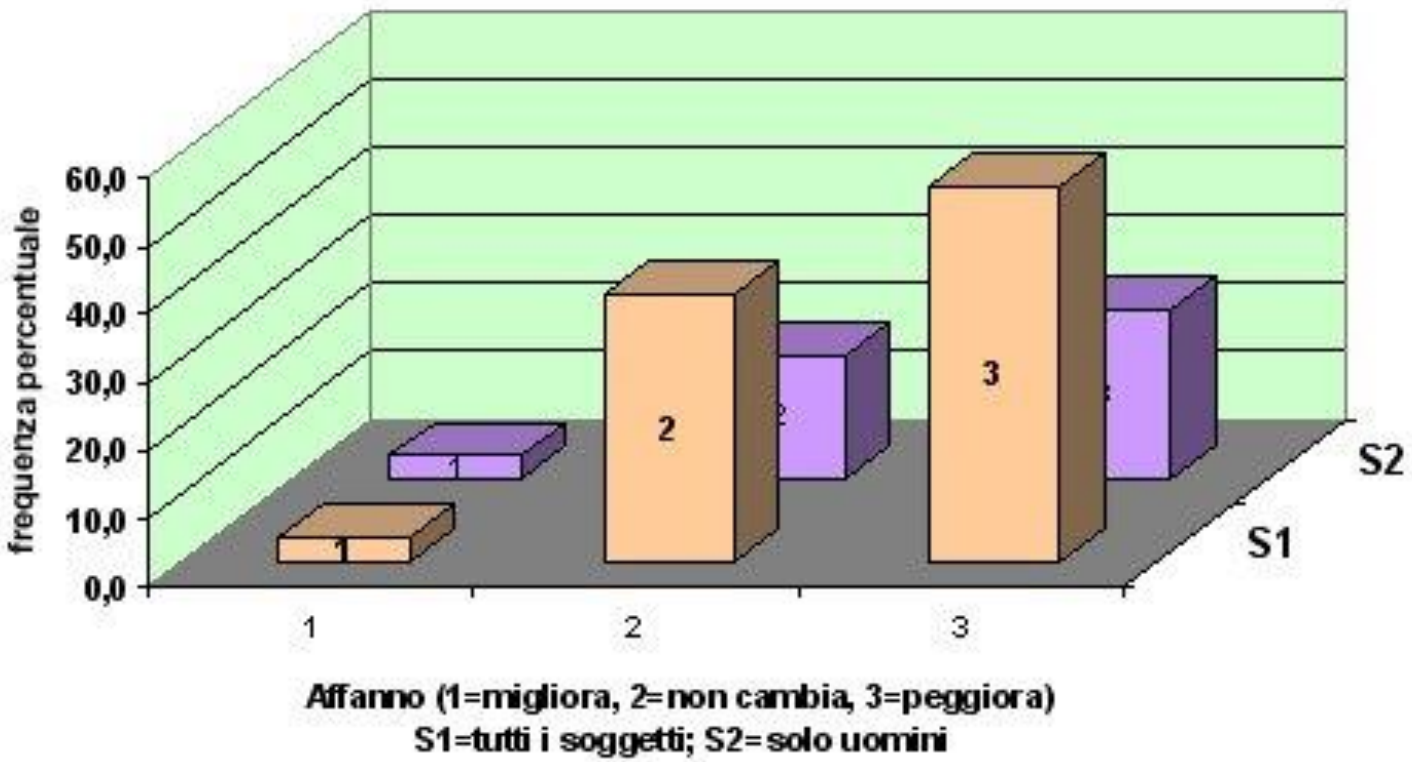
- myocardial infarction,
- increased suicide and aggression,
- decreased respiratory and immune system efficiency,
- and more.

SOME CLINICAL RESEARCH ON HELIOBIOLOGICAL INTERACTIONS, METEOROPATHIES, AND CLIMATOTHERAPY

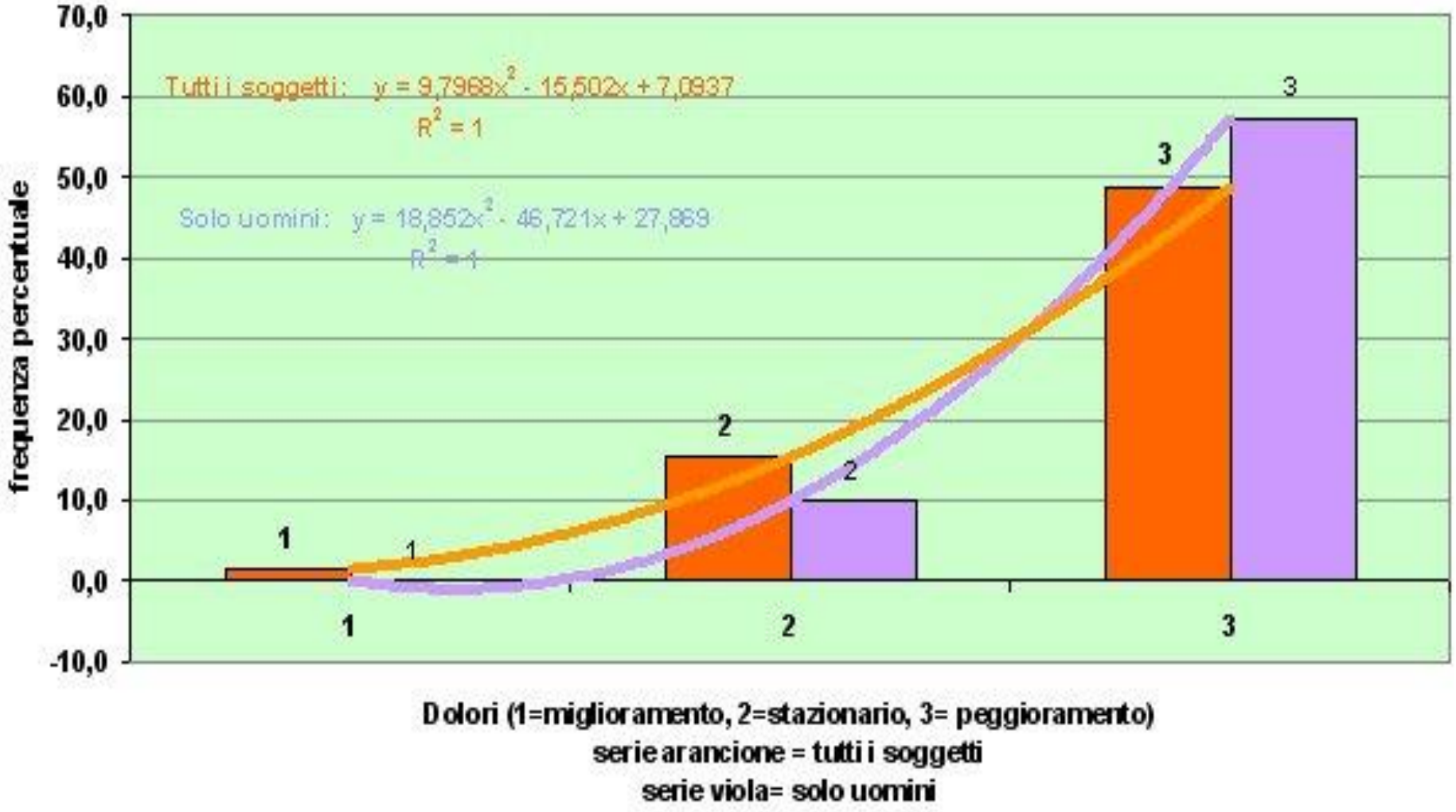
QCT tech's are an automated non invasive apparatus combining bio-resonance and fields for analyzing corporeal energy with the final aim of a re-equilibribium feedback of energy necessary for a reduction of stress and diagnostics of food and drug intolerances. The role of reduced gravity and radiation in space towards stress and performance of astronauts are to be studied.



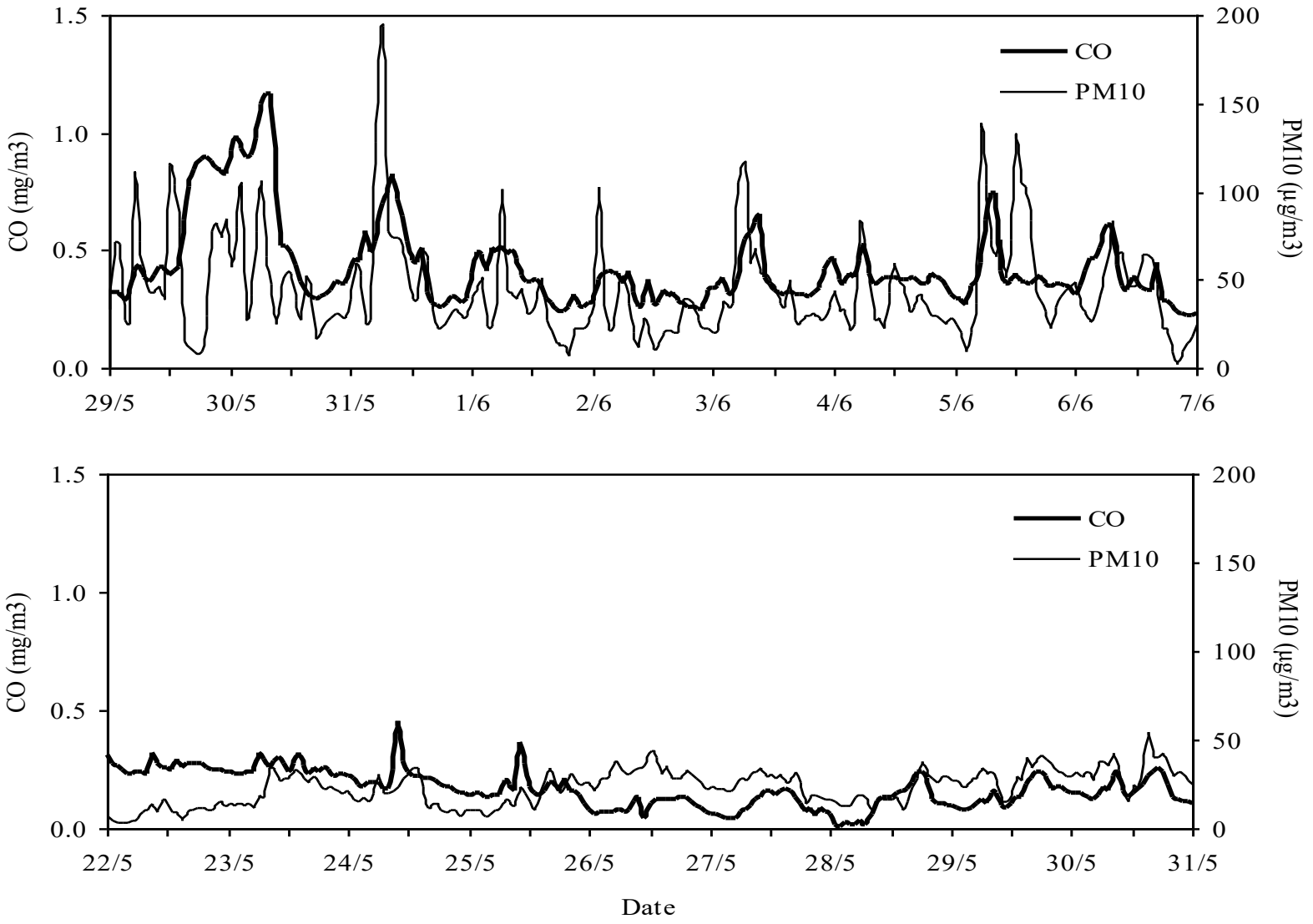
Dispnea and wheather changes in Pietracupa 2001



Pain and thunderstorms in Pietracupa 2001 (CB)



CO-PM10 a Roma e Pietracupa 2001



Controversies on Air Quality and Health: the Case of PM10

29 march-1 april 6° Meeting CEMBREU Briançon
Campi Bisenzio 5 December 2023

V.I. Valenzi[1,4], A. Pisani[4],,
P. Avino[2,4], M.V. Russo[3,4]

Quality of the Air in USA

Current PM10 Levels for Wasatch Front Areas
PM10 Standard and Concentration Breakpoints(ug/m3)

0 - 54	55 – 154	155 – 254	255 or More
Good	Moderate	Unhealthy for Sensitive	Unhealthy

This Air Quality Index Report(AQI) is prepared by the Utah Division of Air Quality for the Wasatch Front
Monday Feb/26/2007

Current Air Pollution Conditions at: 3:09 PM Highest Pollutant is

				Concentration*	
Salt Lake /Davis Counties	**Good**	for	**PM10**	16.00	ug/m3

Sorgenti, livelli ed effetti sulla salute di alcuni inquinanti

Inquinante	Sorgenti	Livello accettabile	Livello di attenzione	Livello di allarme	Effetti sulla salute
SO_2	Combustione di oli e carbone grezzi e raffinati	100 µg/m^3 (media 24 ore)	250 µg/m^3 (media 24ore)	600 µg/m^3 (media orario)	Aumento in generale del tasso di mortalità; aumento del numero di ammissione agli ospedali per trattamenti respiratori.
NO_2	Traffico stradale ed impianti di combustione	135 µg/m^3 (media oraria)	200 µg/m^3 (media oraria)	400 µg/m^3 (media oraria)	Aumento in generale del tasso di mortalità; aumento del numero di ammissione agli ospedali per malattie respiratorie ed asma.
CO	Traffico stradale e combustione del petrolio	10 mg/m^3 (media 8 ore)	30 mg/m^3 (media oraria)		Aumento del tasso di mortalità giornaliera; specificatamente per malattie respiratorie e cardiovascolari.
Ozono	Reazioni fotochimiche	130 µg/m^3 (media oraria)	180 µg/m^3 (media oraria)	360 µg/m^3 (media oraria)	Aumento del tasso di mortalità: aumento del numero di ammissioni agli ospedali per problemi respiratori.
PM10	**Traffico stradale**	**40 µg/m^3 (media oraria)**			Aumento del tasso di mortalità e specificatamente per i trattamenti respiratori.

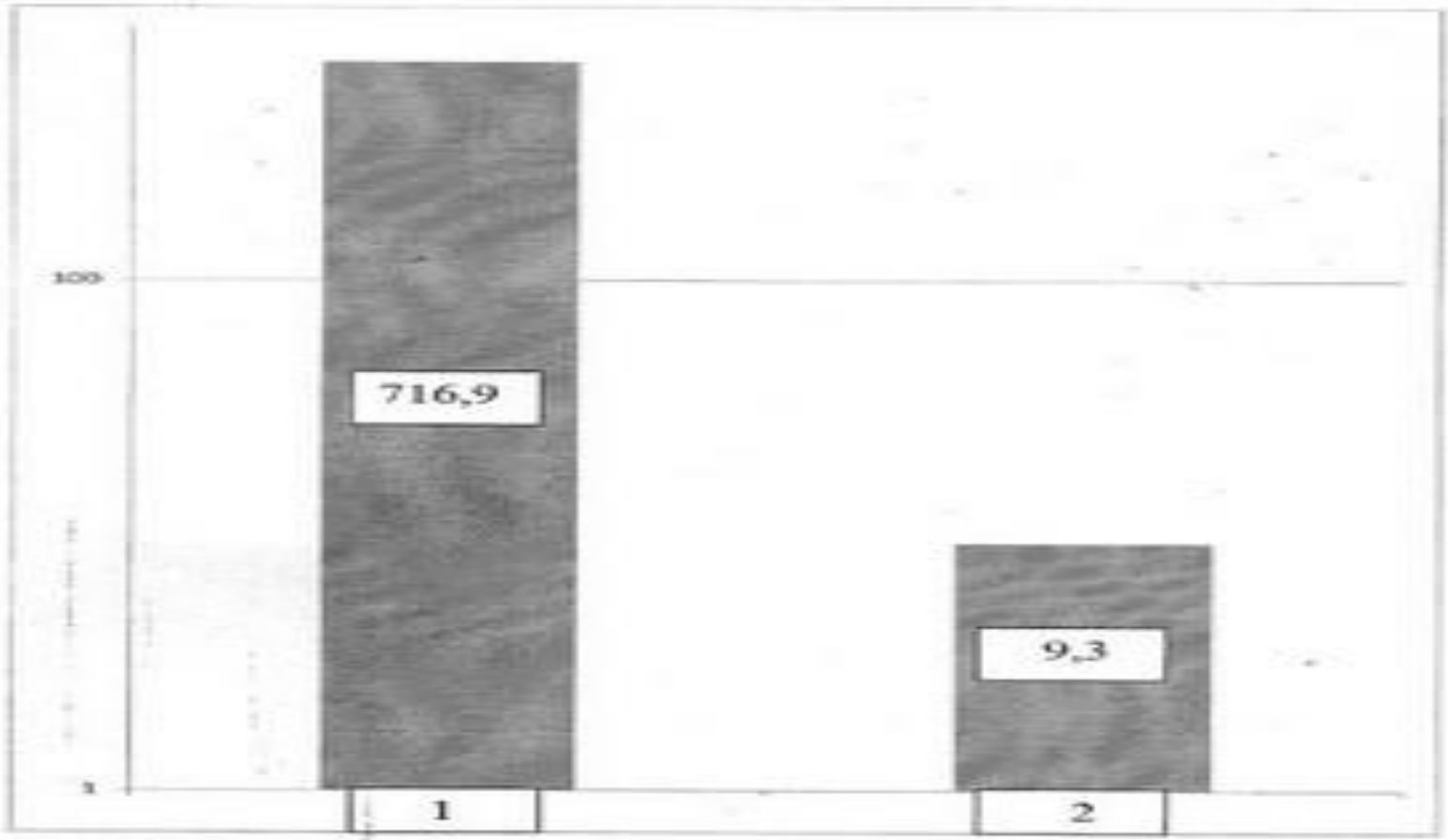
ON THE COMPLEX CHEMICAL-PHYSICAL INTERACTIONS IN THE ATMOSPHERE: the contribution of Luigi Campanella

Molecular Dimension is a fundamental principle in chemistry that a molecule has a defined shape and size. This is key to the understanding of phenomena as diverse as chemical reactions, receptor binding, dissolution and the passage of molecules through a membrane, in supramolecular chemistry.

In some cases, the molecular dimensions of radicals are exploited in designing complex structures, such as in the construction of 1-D or 2-D arrays of radicals within host frameworks.

The combination of a radical's specific electronic configuration, its atomic composition, and its position in a chemical environment determines its molecular dimensions, influencing its reactivity, and magnetic properties.

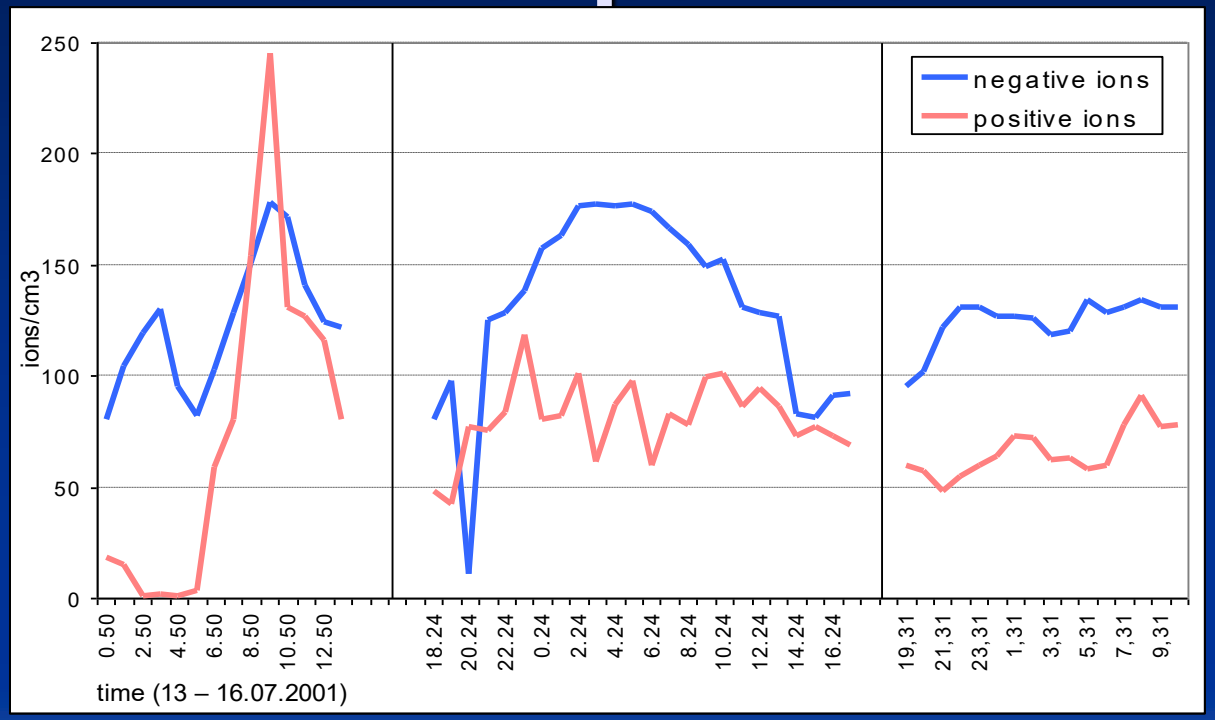
The molecular dimension of oxygen radicals is not a single value, as it depends on the specific radical, such as superoxide (O_{2}^{-}) or the hydroxyl radical (OH). These are molecules with unpaired electrons that have geometries ranging from a trigonal planar shape for alkyl radicals (sp^{2} hybridization) to more complex structures depending on their atomic composition and bonding. For example, the hydroxyl radical (OH) has a molecular structure influenced by its surroundings, and its interaction with other molecules like water is a key area of study.



Различие в заболеваемости бронхиальной астмой у жителей Киргизии, проживающих в низменных (1) или высокогорных (2) районах страны

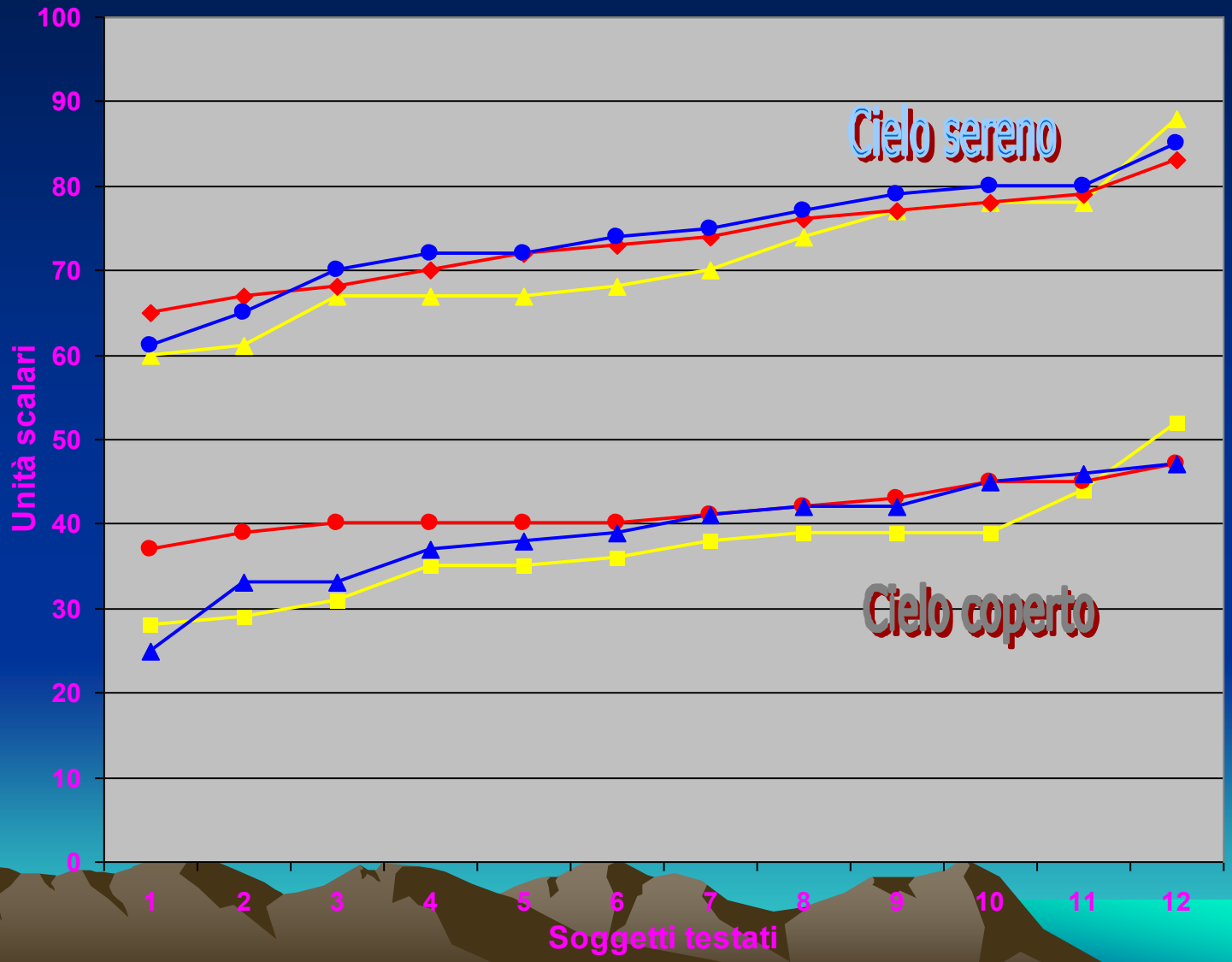
Жители высокогорья болеют бронхиальной астмой в 77 раз реже, нежели жители низменных районов Киргизии.

Is the air ionizzation involved in PM10 Health Effects? Pietracupa 2001

- 

Study on Metheropaty People

With Skin Electric Parameters (SEP) Analyzer Rome 2004



US scale and OHM

24 us	corrisponde a	300.000 Ohm (300 KΩ)
32 us	corrisponde a	200.000 Ohm (200 KΩ)
43 us	corrisponde a	130.000 Ohm (130 KΩ)
49 us	corrisponde a	100.000 Ohm (100 KΩ)
50 us	corrisponde a	95.000 Ohm (95 KΩ)
62 us	corrisponde a	63.000 Ohm (63 KΩ)

Министерство здравоохранения РСФСР

[redacted]

Экз. № [redacted]

СПОСОБ ОЦЕНКИ МАГНИТОТРОПНЫХ РЕАКЦИЙ У ЗДОРОВЫХ И БОЛЬНЫХ ЛЮДЕЙ

Методические рекомендации

Новосибирск — 1987

МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РСФСР

"СОГЛАСОВАНО"

Зам. начальника Главного управления
научно-исследовательских институтов
и координации научных исследований
Л.С.Лукьянчикова
"3" мая 1967 г.

"УТВЕРЖДАЮ"

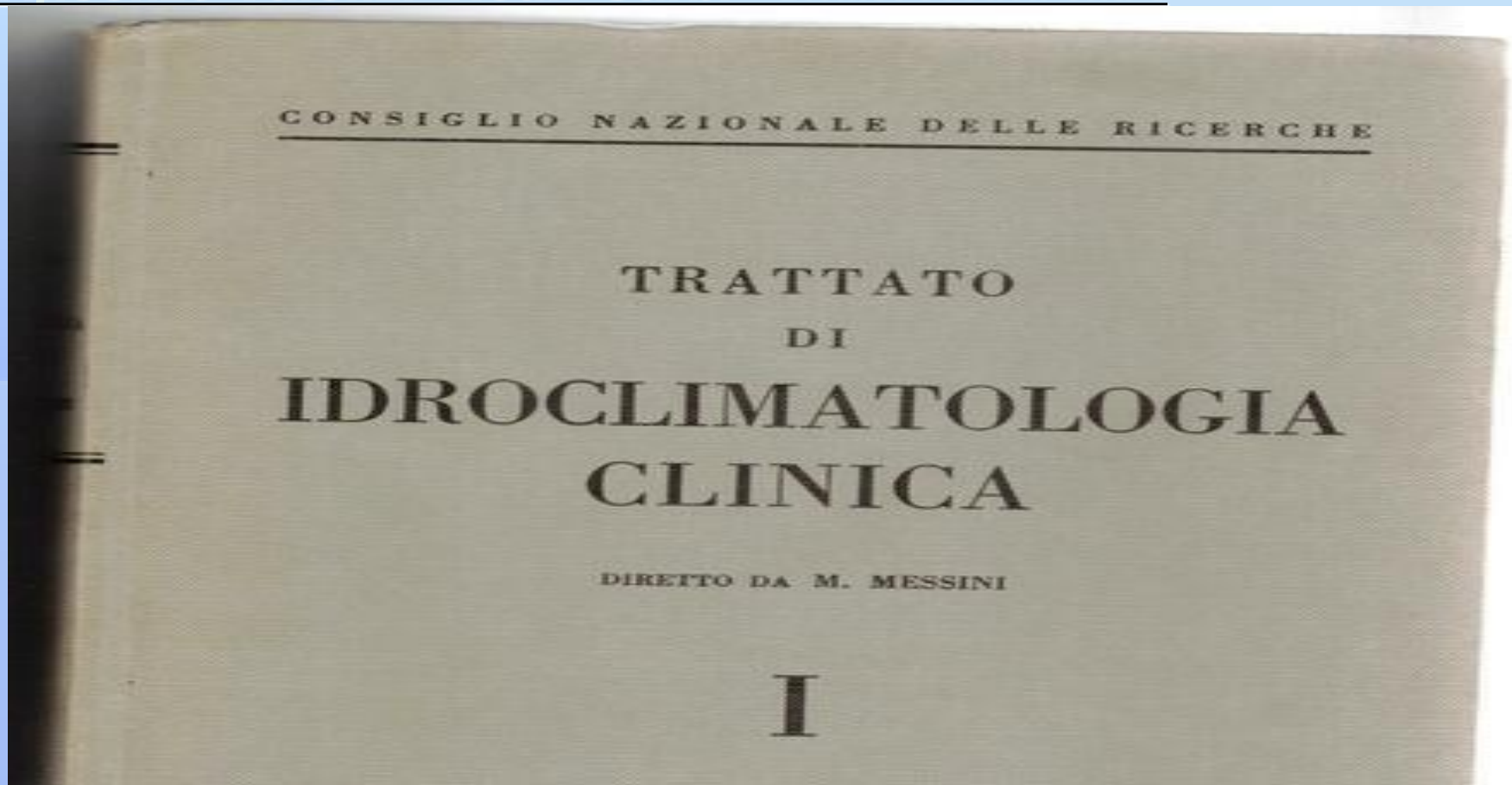
Заместитель
министра
В.Г.Панов
"21" мая 1967 г.

Can MEDICAL HYDROCLIMATOLOGY still be a primary tool for the prevention and integrated therapy of chronic diseases and urban pollution?

https://www.vglobale.it/?s=climatoterapia

https://www.cimb.me/ricerche-idroclimatologiche.html

Vincenzo Valenzi Nouri Garbi Biomet Section CIRPS



WE THINK YES

We will organize an international intedisciplinary project to validate or invalidate these hypotesis

and an International School of Clinical Hydroclimatology

https://www.iiimb.me/files/4-ICC-IS-4-draft.pdf

Spasiba dell'attenzione!

Some References

References

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