

**International Radiation Protection Association
12th International Congress
Buenos Aires, Argentina – October 19-24, 2008**



IRPA 12

Concluding Plenary Session III

**Non Ionizing radiation
Presenter: Rodolfo Touzet**



For the first time the subject of non-ionizing radiation was developed in full throughout an IRPA Congress including the aspects of:

- **The epistemology of radiation and the biological effects.**
- **The paradigm of radiation protection on the Regulatory view**
- **The practice of radiation protection on the use of plans and methodologies to control radiation fields**

Because of the changes made in the program and especially the elimination of the NIR workshop and the seminar we had doubts on the success of the initial project.

However, there was a significant contribution of presentations (about 60) and a good number of attendees at the technical sessions and refresher courses and at the related plenaries

We must further inform that, considering the motto of the Congress: strengthening radiation protection worldwide, the Argentine Society of Radiation Protection organized a local NIR Workshop, in Spanish, that had an attendance of about 200 people.

We will show you some examples of presentations that generated particular interest.

1. The epistemology of radiation **(Biological effects)**

A New Stochastic Model of Carcinogenesis Induced by Ionizing Radiation and the Concept of Breaking Barrier Cell Mechanisms (Igor Akushevich, etc.)

This new approach considers breaking the barrier mechanisms of a cell as key feature of carcinogenesis.

The barrier mechanisms (e.g., antioxidant defense, repair, apoptosis) represent the complex of cell responses to primary cell damages caused by exogenous and endogenous factors

This approach can be applied for ionization or non ionization radiation..!

This shows some advantages to develop studies together between Ionization and Non ionization radiation

1. The epistemology of radiation (Biological effects)

Modelling living cells as signals: a possible approach to ELF radiation phenomena

Leonardo Makinistian^{a,b*}

2 - The paradigm of radiation protection (the Regulatory view)

Precautionary Principle in Health Protection Policies regarding Electromagnetic Fields

**Mirjana Moser
Federal Office of Public Health, Switzerland**

General Peruvian Diagnosis on Non-Ionizing Radiation 2007 Fields

**Víctor Cruz Ornetta
INICTEL- UNI)- Lima -Peru**

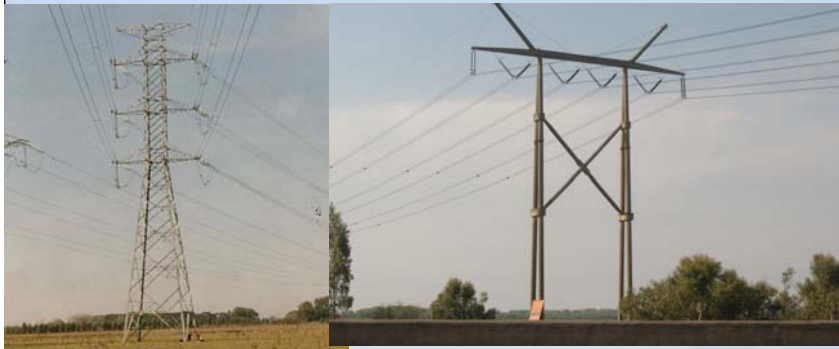
**3 - The practice of radiation protection
(the use of plans and methodologies
to control radiation fields**

Control measures

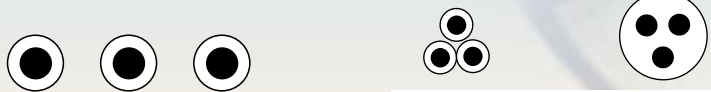
550 kV – 220 kV



132kV



Cables



13.2 kV to 66 kV





APPLICATION OF COMPUTATIONAL DOSIMETRY STUDIES TO ASSESS ELECTROMAGNETIC FIELDS EXPOSURE IN THE VICINITY OF TRANSMISSION LINES AND POWER SUBSTATIONS

Luis Adriano M. C. Domingues, Rafael M. Cruz

Athanasio Mpalantinos Neto, Carlos Ruy N. Barbosa

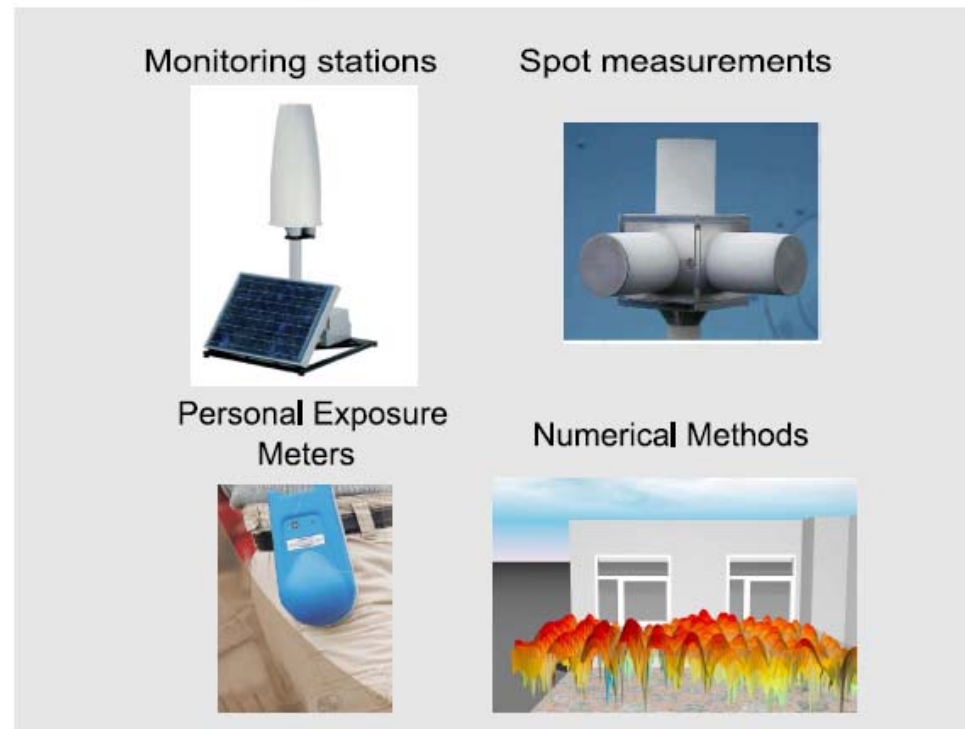
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Athanasio Mpalantinos Neto

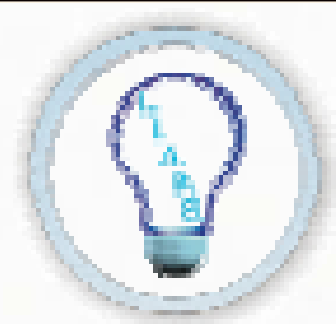
Electrothechnics Department

RF Exposure assessment in general population

A big benefit could be obtained by the combination of this exposure assessment tools



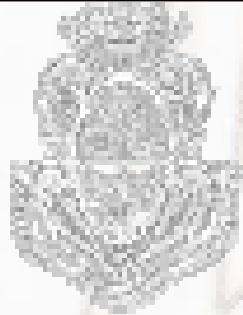
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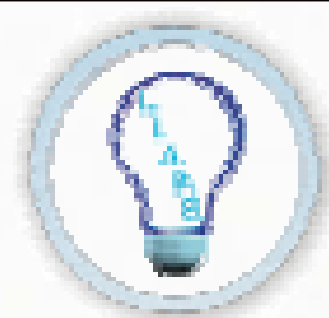
EQUIPMENT

- a) Measurement system integrated with EMF radiation meters and probes calibrated. All calibration measurements are traceable to the National Institute of Standards and Technology (NIST-USA) or Deutscher Kalibrierdienst (DKD)
- b) Global positional satellite (GPS) equipment
- c) Portable and desk personal computers



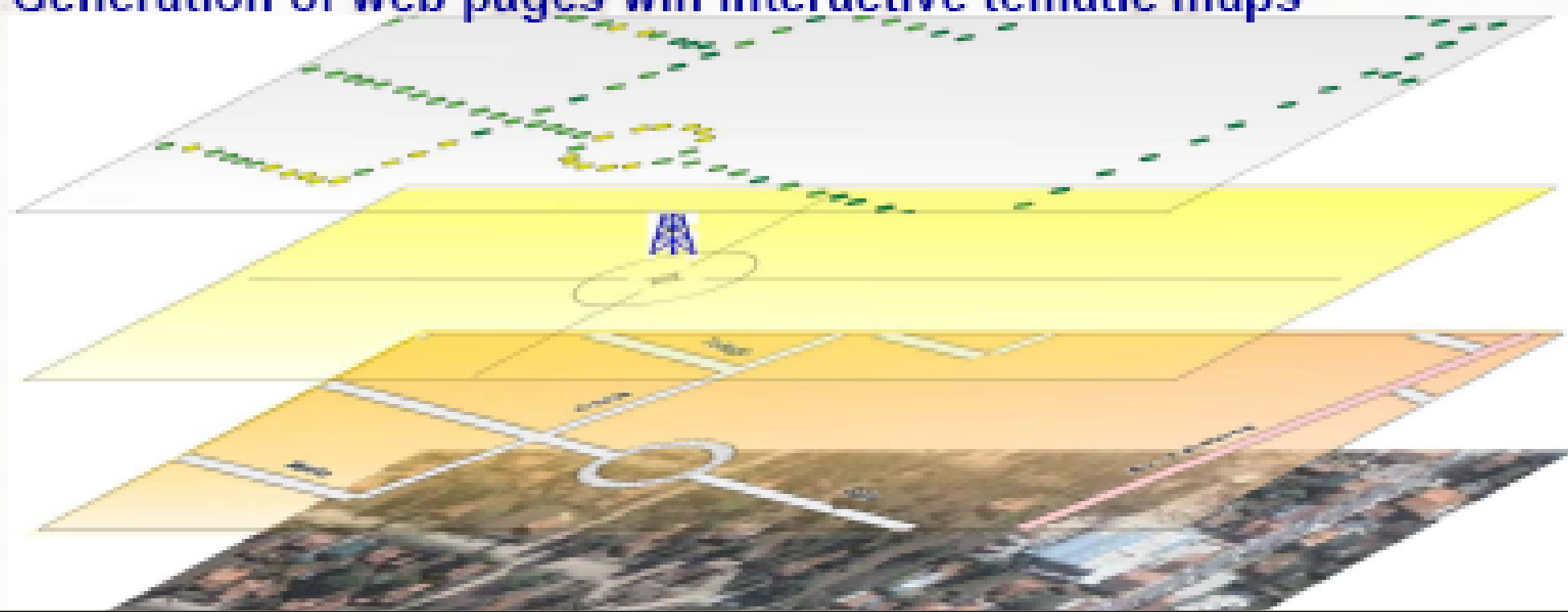


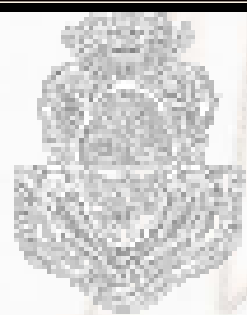
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EMF mapping

- A Geographical Information System is required (GIS)
- EMF values constitute one more data layer
- Other layers can be added to include existing communication installations, schools, hospitals, etc.
- Elements of each layer can be related thru hyperlinks
- Generation of thematic maps
- Generation of web pages with interactive thematic maps



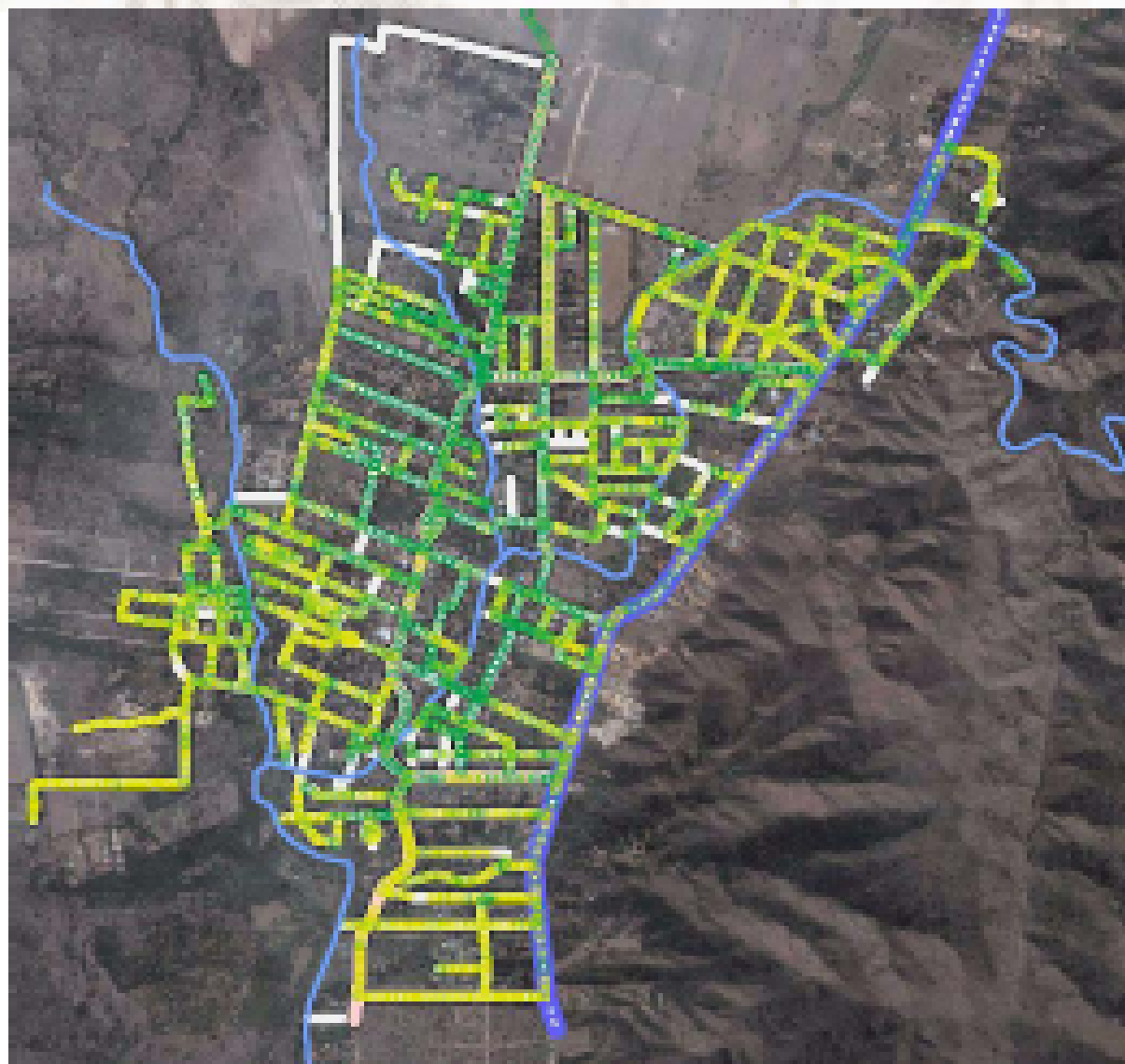


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DYNAMIC METHOD: Villa Gral. Belgrano-Córdoba-Argentina

**SATELLITE
MAP**



The recommendations and lessons learned in greater detail and with many examples, will be included in the Web page, the next week.