

France

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Research activities in France

ELF: Extremely low frequency magnetic fields

Projects funded by EDF-RTE¹

Ongoing projects in 2014 (all of them lasting several years):

- CHAMMA (Mrs. Isabelle Lagroye): ELF magnetic fields and Alzheimer's disease – behavioural study of aged rodents exposed to 50 Hz magnetic fields. The 30-month-long CHAMMA research project is on-going at the IMS laboratory in Bordeaux. It focuses on the potential effects of exposure of mice to 50 Hz magnetic fields during aging. The tested hypothesis is whether exposure can influence the development of neurodegenerative diseases such as Alzheimer's disease (AD) and dementia in the elderly. The studying endpoints are memory performance, specific molecular biomarkers and reactivity of cerebral vessels in mice exposed for three months at the end of their life.
- Magnetophosphenes Threshold (M. Alexandre Legros): Clinical study of acute effects of high ELF magnetic fields (up to 50 mT) on the central nervous system. Co-funding from Canada, USA and UK.
- Electromagnetic compatibility of active implanted medical devices (M. Mustapha Nadi).
- EXPERS: personal exposure to ELF magnetic fields. 24 hours measurements – 2000 volunteers randomly selected over mainland France.

Project funded by Anses²

Each year, Anses is funding research projects in the topics of environmental and occupational health. In 2013, apart from questions regarding chemical, biological, nutritional risks, two questions regarding exposure characterization to ELF fields and understanding of potential mechanisms explaining epidemiological results on childhood leukaemia were raised, but no project was proposed or selected.

RF: Radiofrequency fields

Anses call for research projects on radiofrequency fields

Since 2010, the main research funding for radiofrequency fields health effects in France comes from a tax on network operators. Two million euros are gathered each year. The French Agency for Food, Environment and Occupational Health & Safety (Anses) is in charge of organizing annual calls for research projects in this topic.

The projects funded in 2014, resulting of the 2013 call for projects, are the following:

- CREST (Mrs Elisabeth Cardis): RF exposure induced by novel use and new technologies from mobile communication systems.
- DOSIT (M. Gwenaél Gaborit): High resolution SAR scanner development based on electro-optical probe.
- ELSE (Mrs Anke Huss): Electrohypersensitivity: feasibility study.
- EVIREF (Mrs Véronique Bach): Physiological adaptive responses or avoidance of juvenile rats exposed to radiofrequency waves from base station type antenna.
- Expo_WPT (M. Maxim Zhadobov): Characterization of exposure induced by future wireless energy transfer systems.

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UV: Ultraviolet radiation

Project funded by Anses

In its 2013 call for research projects, Anses raised questions regarding health impacts from UV radiation, the following project has been funded: HeLME-UV (M. Jean-François Doré), residential exposure to UV radiation and childhood malignant lymphoid hemopathy.

Risk assessment activities

Anses released its opinion on radiofrequency health effects in October 15th³. The level of evidence of potential health effects has been evaluated, based on a methodology inspired from the one used by IARC in its monographs. The findings of the risk assessment does not reveal proven health effects. However, some publications suggest a possible increased risk of brain tumor, in the long term, for heavy users of mobile phones. The expertise brings up, with limited levels of evidence, different biological effects in humans or animals, that concern sleep, male fertility or cognitive performance. However, a causal link between those biological effects and possible health effects could not be established.

Given these factors, the Agency does not propose new exposure limits for the general population.

The Agency recommends:

- to use hands-free kits for intensive mobile phone users adults and more generally, for all users, the acquisition of low SAR phones;
- to reduce the exposure of children by encouraging a moderate use of mobile phones;
- the characterization of exposure prior to the development of new network infrastructures;
- that all devices emitting electromagnetic fields to be used close to the body (cordless phones, touch pads, baby sleep phones, etc.) display SAR, as it is already the case for mobile phones.

Information for the general public

ELF:

- The Ministry of Health has issued a new version of his leaflet giving information on extremely low frequencies⁴. This document will inform people about health impacts realities.

RF:

- The Ministry of Health has issued a new version in march 2013 of his leaflet giving information on mobile phones base stations⁵.
- The Ministry of Environment has issued a leaflet giving information on measurements near mobile base stations⁶.
- Governmental information, available on the web site: www.radiofrequences.gouv.fr
- Mobile version of Cartoradio available on AppStore and GooglePlay (<http://www.cartoradio.fr>).

Regulations

The work for the transposition of the European Directive on workers exposure (2013/35/UE) has been engaged.

ELF:

- Publication by the Ministry in charge of the environment of a non-binding instruction to local authorities to avoid as much as possible the building of new premises receiving sensitive persons (hospitals nurseries, schools, etc.) in areas where the magnetic field level is above 1 μT ⁷.
- Since the publication of a regulatory text (April 23rd 2012), the electricity transportation manager (RTE) performs measurements in the vicinity of power lines above 50 kV, when population exposure is expected. The results of those measurements are given to Anses, and set public. A web site administered by RTE gives a user friendly access to the measurement results⁸. Every year, until 2017, RTE will give Anses the results of the past year measurements (around 500 measurements per year). Besides, this regulation enables any city, some associations, and through them any citizen

³ http://www.anses.fr/sites/default/files/documents/AP2011sa0150RaEN_1.pdf

⁴ http://www.sante.gouv.fr/IMG/pdf/Champs_electromagnetiques_extremement_basse_frequence_DGS_2014.pdf

⁵ <http://www.radiofrequences.gouv.fr/IMG/pdf/Antennes-relais-2.pdf>

⁶ http://www.developpement-durable.gouv.fr/IMG/pdf/13192-1_Ondes_electromagnetiques.pdf

⁷ http://circulaire.legifrance.gouv.fr/pdf/2013/04/cir_36823.pdf

⁸ <http://www.clefdeschamps.info/>

to have a free exposure measurement.

RF:

Publication by the Ministry in charge of environment of a set of regulatory texts creating a national monitoring and measuring mechanism funded by a tax on network operators and managed by the National Frequencies Agency (ANFR). The results of those measurements are given to Anses, and set public on cartoradio.fr. Anyone can have a free *in situ* exposure measurement (home and public areas), with new procedures.⁹

UV:

Publication of the decree on artificial ultraviolet radiation on December 27th 2013¹⁰ by the ministries of health, of consumption and justice. This regulation lays down several provisions relating to technical standards, with a view to protecting the public and ensuring their health and safety:

- reinforcement of the content of the health risk warnings relating to artificial tanning, displayed on tanning devices and advertising materials;
- inspections undertaken by bodies accredited by the national accreditation body (Cofrac), or by any other member body of the European Cooperation for Accreditation signatory to the multilateral mutual recognition agreements;
- introduction of an initial inspection of tanning devices before first use;
- notification when a tanning device is transferred and when it is destroyed, in order to ensure traceability of these devices throughout their life cycle (the notification of the purchase of a device having already been mandatory since 1997);
- marking the surface of UV emitters with a code set out under the standard EN 60335-2-27 (traceability and safety).

Risk management activities

RF:

- The French government asked to J.F. Girard, Ph. Tourtelier and S. Le Boulter to write a report on the “sobriety principle” in terms of electromagnetic waves exposure. This report¹¹ has been published in December 2013.
- A new draft law¹² proposed by green Members of Parliament, led by Mrs. Abeille, is still examined by the 2 chambers of the parliament (national assembly and senate), and adequate commissions. The bill has been adopted at first reading in Parliament. It is related to RF exposure sober, transparency and dialogue at the municipal and inter-municipal level. This bill deals also with simulation, measurements and processing of the levels of exposure which are well above the national observed average. There is another section about public information awareness and protection (SAR display for various RF transmitters, dedicated headset for children under 14, possibility to turn off a wireless Internet transmitter, restriction on advertising).
- Operational committee COPIC activities: the goal was to study the feasibility of lowering exposure to electromagnetic waves emitted by mobile phone masts while maintaining service coverage and quality. The final report has been published the 31st of July 2013. The exposure evaluation has shown very low levels compared to the limits. The reduction of exposure to a level of 0.6V/m would require at least 3 times more antennas to ensure the same coverage.
- Fund for *in situ* exposure measurements (home and public areas), with new procedures¹³.

Statements from NGOs, institutions, etc (not exhaustive).

Court decisions

Decision of the Council of State (April, 12th 2013) concerning a recent high-voltage overhead power line (400 kV) known as “Cotentin-Maine”¹⁴. The Council of State considers the risk of increased leukaemia incidence in

⁹ <http://www.service-public.fr/actualites/002936.html>

¹⁰ <http://www.legifrance.gouv.fr/affichTexte.do?dateTexte&categorieLien=id&cidTexte=JORFTEXT000028398316>

¹¹ <http://www.ladocumentationfrancaise.fr/rapports-publics/134000845/>

¹² <http://www.assemblee-nationale.fr/14/propositions/pion1635.asp>

¹³ <http://www.service-public.fr/actualites/002936.html>

¹⁴ <http://www.conseil-etat.fr/node.php?articleid=2894>

children living close to high-voltage overhead power lines as a sufficiently plausible hypothesis, based on current scientific knowledge, to justify enforcement of the precautionary principle.

Statement of the Academies

The French Academy of medicine published an opinion on artificial UV on June 2013¹⁵. The Academy ask the French government to prohibit advertising on artificial tanning (like for tobacco and alcohol).

Media

The topics of hypersensitivity and voting of the “Abeille” law have been the major issues covered by the French media in the last year.

¹⁵ <http://www.academie-medecine.fr/mise-en-garde-sur-les-dangers-des-cabines-de-bronzage/>