

for exposure to non-ionizing radiation (NIR) were introduced (see report on IEEE SCC28).

The following two lectures dealt with the basic differences in setting standards between Western countries and countries of the former Eastern bloc. The differences in defining limit values and, correspondingly, in recommendations (guidelines) above all were based on different point of views. The question, why there are different assessments, is answered by pointing to the economic situation, to different interpretations of biological responses and, not last, philosophical reasons.

During the workshop the topic of low and high frequency pulsed fields and their effects on subcellular and cellular levels was addressed. The focus were known cellular effects of ELF-impulses and impulse modulated high frequency fields. The impact threshold at which effects are observed is very high, namely in the range of >500 kV/m, similar to known effects on membrane depolarisation and on signal transduction. Non-thermal effects were addressed too, but only concerning high electrical field strengths which also produce thermal effects.

Another scientifically confirmed effect produced by pulsing (pulsed microwaves) is subjective hearing. Chou, Lin and Seeman gave a survey on already published studies on the topic. The studies going back up to 1956 deal with defining hearing thresholds, signal forms, pulse duration, power, repeat frequency etc. Some of the past studies presented focused not only on the subjective hearing impression, but also on quantification methods (evoked responses etc.). The phenomenon is explained by micro-thermal dilations in the head area producing acoustic signals (thermo-elastic expansion). These effects in

Personal Comment on BEMS 2000

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Each year the „rapporteur“ gives his impression regarding the results of the annual meeting of the Bioelectromagnetics Society. My proposal for a ranking would be „deuce“.

On the one hand, this ranking means that the presented results and information provided by new research contributions were more or less equally divided between groups assuming health risks and those who only see a marginal risk or no risk at all. On the other hand, „deuce“ also means that nothing is decided. „Nothing decided“ means that the presented lectures and posters regarding research results as well as the contents of the presentations did not succeed in denouncing current knowledge and totally change risk assessment and discussion.

Regrettably, the quality of the presented studies differed very much. Besides high-ranking studies already published in renown peer-reviewed journals or currently in print the meeting also introduced reports of doubtful scientific contents. Each one of the above mentioned groups will put greater emphasis on results confirming certain tendencies. Therefore, reported effects do

not automatically provide valid evidence of or against a certain impact.

Numerous ICNIRP seminars made an attempt to fill gaps of knowledge about effects of electromagnetic fields and to define the future course of research. Many contributions at the BEMS meeting 2000 as well as at previous events had - in my view - entirely different motives. When a laboratory method is established in respect to other problems, i.e. environmental compatibility, there are often made attempts to use the new model also in connection with EMF issues. Whether this approach always makes sense remains questionable.

The scientific confirmation and evaluation of found effects is a difficult process already described in many other reports. Insofar, an event such as the BEMS is an appropriate forum to spread information about current research studies from all over the world. The scientific community meets for discussion, focusing on single facts that seem to be important for an assessment of the issue and particularly for the own work. Thus, such meetings are necessary and very important for progress in this area. In this respect the event in Munich must be judged as a huge success. Future annual meetings will be compared to it.