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Evidence of the interaction of weak electromagnetic fields in the band of UHF and biosystems by means of NLRI

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The spectrum analysis of interactions between biological tissues and the signals emitted by a “bioscanner” Trimprob, as available in literature, could be used to investigate cases suspected disease or cancer . This methodology provides a structural characterisation of biologic tissues in support of modern diagnostic imaging techniques. Further to existing literature describing methods for cancer detection by means of electromagnetic fields, the paper shows some new applications.

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Interaction of the electromagnetic fields with malignant tissues

H. Fricke[i] and S. Morse. In their 1926 paper entitled ”*The electric capacity of tumors of the breast*”, they reported that “*malignant tumors have a greater polarizability than normal breast tissues or benign tumors”*. They carried out their experiments at low frequencies around 20 kHz. Tissues were cut into small blocks and placed in a conductivity cell for measurement. They claimed that measurements performed on tissues from locations other than the breast convinced them that the method was of general applicability and that in some cases the “*measurements may be made directly on the patient*”. Following the publication of these results, Fricke published a paper in which he declared that “*It seems probable that the measurement of the capacity may provide a very practical method for diagnosing the malignancy of a tumor.”*

To better understand these results, relatively to the Bioscanner/Trimprob technology, it is extremely interesting to enter this paper in which many of the aspects that arises in the common use of the Trimprob are clarified:

“*While the resistance of biologic tissues has been studied by many investigators, little attention has been directed to their capacity”.* The term “capacity” is to be associated to the well known property of the tissues

which is usually called its “polarization”, and we have to remember that theoretically are assumed two type of electric capacity, the first is the “static capacity” that is independent to the frequency of the alternating current, the second is the “polarization” type that depends upon the interphases in the tissues and suggest that capacity might have a considerable biologic significance. The “polarization” capacity is related to the alternating current applied or irradiated to the tissue under test. In their paper, Fricke and Morse claims: It has been a constant surprise to find that *the capacity of malignant tumors of the breast is so consistently larger than that of normal tissues in the same location or of benign tumors as to make its estimation in any individual case clearly of diagnostic value.*

As above reported, these aspects are important to clarify the mechanism of the *non linear resonance interaction* applied to the diagnosis by the Trimprob. It is known by the users, that the Trimprob works on three frequencies, and that the first is 462 MHz , while the others are the harmonics of the first ones. In according with the Fricke and Morse paper, examining a tissue the capacity values have to be higher for the malignant tumors, lover for benignant and much lower for healthy ones. The measured values are also greatly different in the order of four times greater for malignancy than for healthy tissues. In other words, if we consider the cells like a passive oscillator , we have to expects that a malignant cells agglomerate, that it is characterized by a high capacity, must have a non linear resonance interaction on the lower frequency of the harmonically related group emitted by the Trimprob. Differently, the benignant pathologies, like Benign Prostate Hypertrophy or Breast Fibromas , will not have the same capacity than a malignant tumor and of course, the non linear resonance interaction could be detected on a higher frequency.

The first experiments carried out by the author in the early days of the Bioscanner invention and development, as well as the clinical trials on Prostate, Breast and Bladder, Thyroid, Stomach-duodenum have confirmed these aspects, and it was possible to realize a not invasive diagnostic tool, the Trimprob, that is based on these researches and that is ‘medical CE’ certified.

Following these researches some astonishing questions arises: it is possible to selectively use the detected interaction frequencies to “search and destroy” an early cancer agglomerate? It is possible to pick-out Zhadin effect ELF “signals” “in vivo” from biologic tissues during a Trimprob investigation by means of an adequately modified scanner, and if it could be possible, these ELF lines could be affected by a pathology?

To provide an answer to these intriguing questions, several basic researches and laboratory trials could be necessary and desirable.