

## **Electromagnetic Man – Biophoton emission is correlated to resistance values of the skin, but even to the distribution function of electric parameters of the skin.**

F.A.Popp, Y.Yan. A.Popp, E.Humt and S.Cohen

A surprising, but according to our previous results not completely unexpected new discovery is a recent observation that biophoton emission of the human body is significantly correlated to the electrical parameters of the body's skin. This does not hold only for the resistance (conductivity-) values, but even for the agreement (or deviations) of the distribution function of skin-resistance values to (or from) a Gaussian- oder Lognormal- distribution.

A proband has been subjected to measurements of biophoton emission and at the same time to measurements of skin-resistance values, where both hands were subjects of the measurements of (1a) spontaneous biophoton-emission (SE) and (1b) delayed luminescence (DL) in complete darkness as well as (2a) always 500 hundred skin-resistance values (R) and (2b) distribution functions of skin resistance values (A and B). The value A is a measure of the agreement of the frequency of skin resistance values to a Lognormal distribution and B the deviation of this distribution function from a Gaussian function. The measurements were performed over a time of 3 weeks every day from 10 a.m. to 4 p.m. every 2 hours. Fig.1a displays the original values of SE, separated for left and right hand. Fig.1b shows the same for the Fourier coefficients (periodogram) of Fig. 1a. It turns out that not only the (expected) correlations of all the parameters SE, DL, R, A and B between left- and right-hand and between SE and DL- values are observable, but – and this is most astonishing – also significant correlations between SE- + DL values and R,A, and B –parameters. Table Ia and Table Ib demonstrate the correlation coefficients within and between the different groups of measurements quantitatively.

Fig.1a: The temporal course of measurement results of biophoton emission (SE, spontaneous photon counts per second, left hand and right hand, SE-li Hi, SE-re Hi), delayed luminescence (DL in counts per 50 ms, left hand and right hand, DL-liHi, DL-reHi), A-values as a measure of the agreement of the Lognormal distribution of resistance values of the hands with the actually measured distribution function of left and right hand (Ali, Are), B-values as a measure of the disagreement of the Gaussian distribution of the resistance values of left and right hand (Bli, Bre) and the mean values of the resistance of both hands (Rli and Rre). The measurements were performed every two hours over three weeks. Table Ia displays the correlation coefficients between all these measurements.

Fig.1b. displays the periodogram of all these measurements, and Table Ib the corresponding correlations coefficients.

The results confirm again evidence of the following results (1-7)

- The biophoton field is almost fully coherent and – as a consequence – strongly coupled to all physiological functions.
- It represents the regulatory activity not only from all the chemical reactivity in single cells, but performs the regulatory activity even over the whole body.
- In this holistic function it displays all the biological rhythms of the body.
- In turn, the measurements of the electric parameters of the skin provide a powerful tool of looking through the window of biological regulation.
- Regulatory activities of the body are not stable functions of the electromagnetic fields within the body, but subjects of permanent rhythmical, oscillatory and coherent field amplitudes.
- On this basis powerful tools of as well diagnostic and therapeutic methods can be developed. One example is our Regulation Diagnosis which is used already in trials of serious medical applications.
- Let us refer here to our “Regulation Diagnostics” – Regulationsdiagnostik.

References:

- (1) F.A.,Popp, B.Ruth, W.Bahr, J.Böhm, P.Graß,G.Grolig, M.Rattemeyer,H.G.Schmidt, P.Wulle: Collect.Phenomen.3 (1981), 187.
- (2) S.Cohen and F.A.Popp: Biophoton Emission of the human body. J.Photochem.Photobiol. B 40(1997), 187.
- (3) S.Cohen and F.A.Popp:Low-level luminescence of the human skin. Skin Research and Technology 3 (1997),177.
- (4) C.L.Zhang and F.A.Popp: Log-Normal Distribution of Physiological Parameters and the Coherence of Biological Systems. Medical Hypotheses 43 (1994), 11.
- (5) S.Cohen, Y.Yan and F.A.Popp: Internet Representation.
- (6) S.Cohen and F.A.Popp: Biophoton Emission of the human body. Indian Journal of Experimental Biology 41 (2003), 440.
- (7) W.Klimek: Die elektrische Hautleitfähigkeit als Spiegel des inneren Regulationszustandes. Erfahrungsheilkunde (EHK) 53 (2004), 419.

Figure Ia

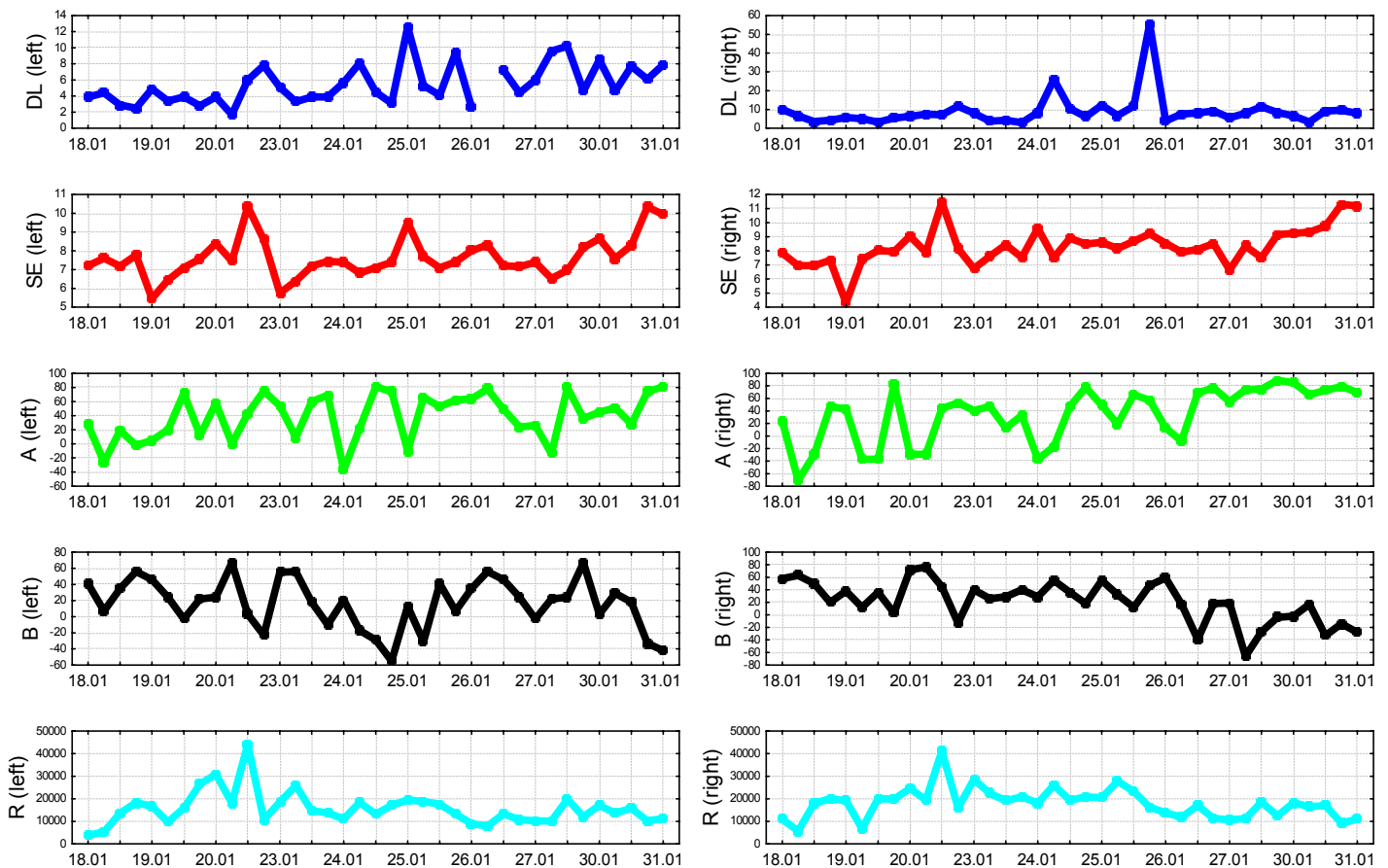


Figure 1b

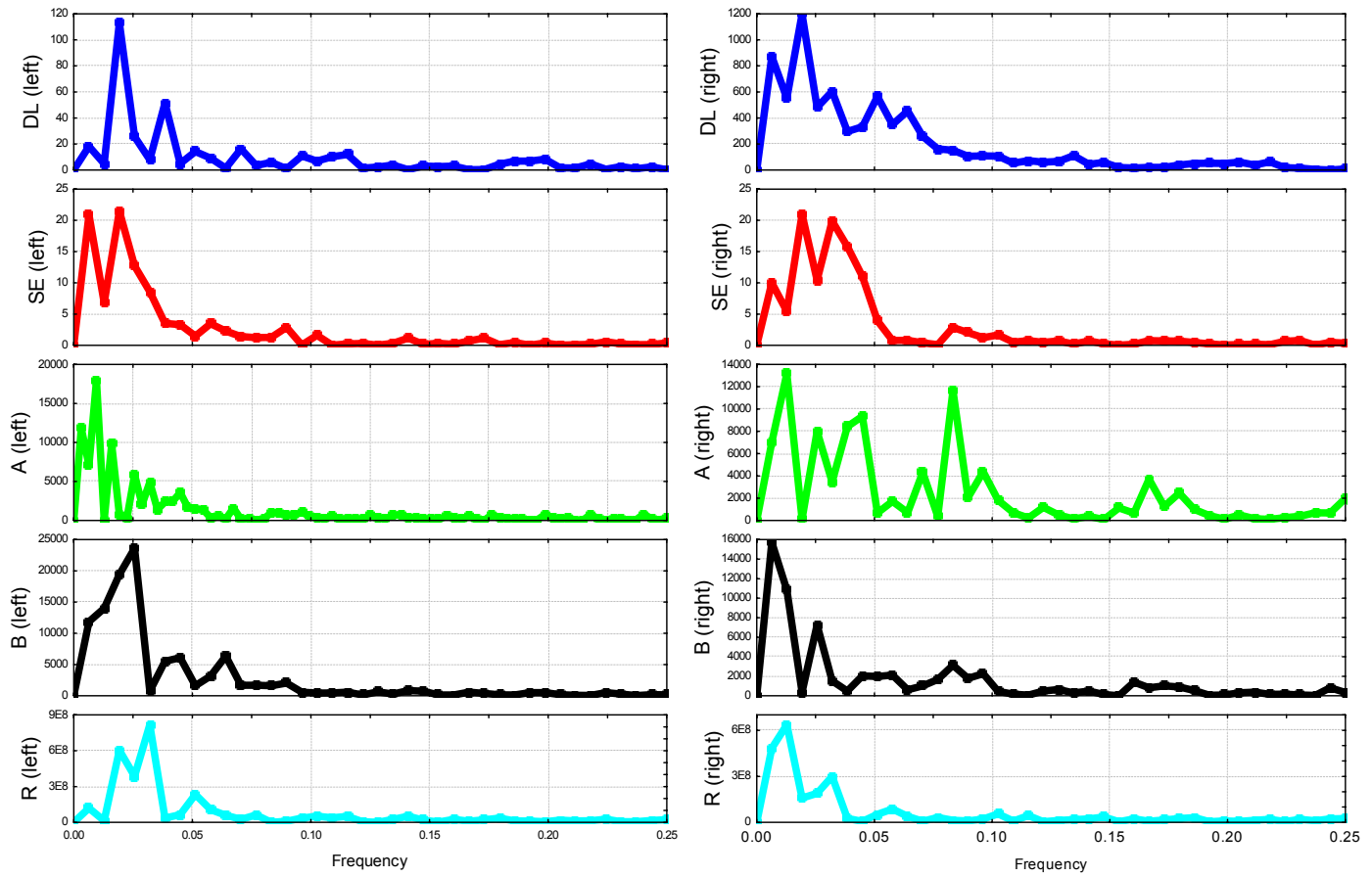


Table 1a Marked correlations are significant at $p < .05000$ N=36 (Casewise deletion of missing data)										
Variable	SE-li HI	SE-re HI	DL-li HI	DL-re HI	Ali	Are	Bli	Bre	Rli	Rre
SE-li HI	1.00	<i>0.79</i>	0.29	-0.00	0.23	0.21	<i>-0.41</i>	-0.10	0.23	0.06
SE-re HI	<i>0.79</i>	1.00	0.24	0.14	0.32	0.28	<i>-0.37</i>	-0.26	0.19	0.09
DL-li HI	0.29	0.24	1.00	<i>0.47</i>	0.03	<i>0.36</i>	-0.28	<i>-0.41</i>	-0.02	-0.02
DL-re HI	-0.00	0.14	<i>0.47</i>	1.00	0.10	0.10	-0.14	0.10	-0.06	0.01
Ali	0.23	0.32	0.03	0.10	1.00	0.32	<i>-0.48</i>	-0.15	0.06	0.17
Are	0.21	0.28	<i>0.36</i>	0.10	0.32	1.00	-0.09	<i>-0.64</i>	0.08	0.00
Bli	<i>-0.41</i>	<i>-0.37</i>	-0.28	-0.14	<i>-0.48</i>	-0.09	1.00	0.13	0.06	-0.00
Bre	-0.10	-0.26	<i>-0.41</i>	0.10	-0.15	<i>-0.64</i>	0.13	1.00	0.18	0.30
Rli	0.23	0.19	-0.02	-0.06	0.06	0.08	0.06	0.18	1.00	<i>0.84</i>
Rre	0.06	0.09	-0.02	0.01	0.17	0.00	-0.00	0.30	<i>0.84</i>	1.00

Table 1b Marked correlations are significant at $p < .05000$ N=79 (Casewise deletion of missing data)										
Variable	P-SEliHi	P-SEreHi	P-DLliHi	P-LreHi	P-Ali	P-Are	P-Bli	P-Bre	P-Rli	P-Rre
P- SEliHi	1.00	<i>0.80</i>	<i>0.72</i>	<i>0.91</i>	<i>0.85</i>	<i>0.44</i>	<i>0.85</i>	<i>0.69</i>	<i>0.68</i>	<i>0.70</i>
P-SEreHi	<i>0.80</i>	1.00	<i>0.74</i>	<i>0.82</i>	<i>0.73</i>	<i>0.51</i>	<i>0.68</i>	<i>0.39</i>	<i>0.81</i>	<i>0.53</i>
P- DLliHi	<i>0.72</i>	<i>0.74</i>	1.00	<i>0.74</i>	<i>0.70</i>	0.22	<i>0.67</i>	0.16	<i>0.58</i>	<i>0.25</i>
P-DLreHi	<i>0.91</i>	<i>0.82</i>	<i>0.74</i>	1.00	<i>0.92</i>	<i>0.47</i>	<i>0.80</i>	<i>0.61</i>	<i>0.73</i>	<i>0.69</i>
P-Ali	<i>0.85</i>	<i>0.73</i>	<i>0.70</i>	<i>0.92</i>	1.00	<i>0.30</i>	<i>0.62</i>	<i>0.51</i>	<i>0.71</i>	<i>0.66</i>
P-Are	<i>0.44</i>	<i>0.51</i>	0.22	<i>0.47</i>	<i>0.30</i>	1.00	<i>0.57</i>	<i>0.69</i>	0.17	<i>0.60</i>
P-Bli	<i>0.85</i>	<i>0.68</i>	<i>0.67</i>	<i>0.80</i>	<i>0.62</i>	0.57	1.00	0.66	<i>0.53</i>	0.65
P-Bre	0.69	0.39	0.16	0.61	0.51	0.69	0.66	1.00	0.21	0.86
P-Rli	0.68	0.81	0.58	0.73	0.71	0.17	0.53	0.21	1.00	0.43
P-Rre	0.70	0.53	0.25	0.69	0.66	0.60	<i>0.65</i>	0.86	0.43	1.00