



## Schalow G

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**From human Neurophysiology to Neural repair in children, Parkinson, Hypertension, Aging, Coma and Cancer via Coordination Dynamics Therapy**

Brain and spinal cord injuries can partly be repaired by a movement-based learning method called Coordination Dynamics Therapy (CDT). Following injury, malformation or degeneration not only motor and vegetative functions become impaired, but also the coordinated firing of neurons. The neural repair by learning includes the movements creeping, crawling, walking, running and jumping to induce plasticity for repair. The phase and frequency coordination of neuron firing can efficiently be improved when exercising on a special CDT device on which the precise movements are imposed by the device. By learning transfer vegetative functions like urinary bladder continence, speech and higher mental function can be repaired. - The progress in repair of the human brain became possible because of the newly developed single-nerve fiber action potential recording method. When measuring simultaneously the impulse patterns running into and out of the CNS in cauda equina nerve roots due to natural stimulation, the organization of the human CNS can be measured and analyzed at the single-neuron level. Combining morphometry and

electrophysiology, a classification scheme of human peripheral nerve fibers could be developed and neurons identified. It is thus possible to measure at the single-neuron level the organization of the human CNS, a prerequisite for copying the human brain artificially.

### Speaker Biography

Schalow G studied electronics (Dipl Ing, 1963) and worked 2 years as a technical engineer at Bosch Electronics. Afterwards he studied theoretical physics at the Free University of Berlin (1970) and worked at the Hahn-Meitner-Institute for Nuclear Physics and promoted in 1973 (PhD). From 1975 to 1977, he was post doc with Katz, Huxley and R Miledi at the Institute of Biophysics, University College London. At the Saarland University from 1977 to 1983, he was assistant at the physiological institute and studied medicine (MD). From 1985 to 1992, he was research assistant at the Ernst-Moritz-Arndt-University of Greifswald (neurosurgery, pathology, neuro-traumatology). From 1992 to 1998, he was leading doctor for clinical research at the Swiss Paraplegic Center Nottwil. From 1998 to 2003, he was working in the field of neuro-traumatology at Tampere and Turku University, Finland. From 2003, he was guest professor at Tartu University (Estonia) and afterwards private researcher because human neurophysiology and clinical research in not organized. He has 100 publications in the fields of human neurophysiology and clinical research and can partly repair the human brain.

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