

# Charles P. Enz : a short biography

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## CHARLES P. ENZ : A SHORT BIOGRAPHY

On January 19, 1985, Professor Charles Paul Enz celebrated his sixtieth anniversary. It seemed natural to his colleagues and close collaborators to mark the event by organizing a conference on subjects related to his fields of research. The scientists approached accepted to contribute to this jubilee with enthusiasm.

Son of Paul, a mill expert and Melanie, an accomplished pianist, Charles was born on January 19, 1925 in Zurich. At the time the family was living in Paris where Charles spent the first three years of his life. In 1928 the Enz's returned to Switzerland and settled in Oberuzwil. There Charles received his primary and secondary education and then attended the gymnasium in St. Gallen. It was during this time that he learned to play the violin and it is significant that he considers his music professor as his most influential teacher. He also adhered to the students organization "Rhetorica", an experience that widened his intellectual horizon.

The following years were dedicated to his education as a physicist and his first steps in the world of fundamental research. He had to face several longer interruptions due to illness. In these difficult situations he showed a great deal of courage and determination to pursue his goals. In 1951 Charles married Ilse Achatz. They have two children, Brigit and Christian.

In 1952 he graduated at the ETH in Zurich with a diploma work on the electron self-energy, under the supervision of Wolfgang Pauli. From 1951 to 1953 he occupied an assistant position at the Geophysics Institute of professor F. Grassmann. Between 1953 and 1956 he worked as a theoretician in the laboratory of Professor Georg Busch. There he lived in a stimulating scientific milieu, meeting among others E. Mooser, A. Müller, O. Vogt and S. Yuan. He studied the thermal scattering of elec-

trons in semiconductors, the subject of his first publication and of a communication to the first international conference on semiconductors in Amsterdam, in 1954. At the same time Charles Enz was preparing a PhD thesis with Pauli on the renormalization in the theory of photon pairs. This was the subject of his first publication on field theory and elementary particle physics, in 1956. For the next three years he was an assistant of W. Pauli and during these important years he also met scientists like R. Jost and M.R. Schaffroth. The double background thus acquired i.e. solid state and elementary particle physics, marked in many respects his future as a physicist, giving him a wide and profound understanding of the problems of contemporary physics, the interplay of concepts and the underlying symmetries. It is at the origin of his open-mindedness towards new fields of research. Between 1959 and 1961 he was at the Institute of Advanced Studies in Princeton, where he met F. Dyson, T.D. Lee, R. Oppenheimer and C.N. Yang, among others. He started working on the analytic properties of scattering amplitudes and also begun his historical studies devoted to his former teacher by publishing a bibliography of Wolfgang Pauli's work.

Enz's reputation was by now firmly established. He received offers from the Universities of Bern, Neuchâtel and Geneva and became a full professor of theoretical physics at the University of Neuchâtel, a position he held until 1964. There he investigated the relations between solid state and elementary particle physics by working on the field theoretical formulation of the former. A result of these studies were his beautiful lectures on many-body theory. In 1963/64 he was visiting professor at Cornell University where he was led to new areas of research, like the study of second sound in solids. In 1964 C.P. Enz accepted an offer from J.M. Jauch, the founder of the theoretical physics department of the University of Geneva, to become professor of theoretical physics, a chair he still holds.

In this short note we cannot trace in detail the whole of

his scientific production since then. It covered subjects in hydrodynamics (second sound, two fluid description of ordered systems), structural phase transitions, superconductivity, general many-body theory and elementary particle physics. From about 1974 the problem of the characterization of irreversible behaviour and the study of systems out of equilibrium became the focus of his research activities. His recent work in this area includes the Fokker-Planck description of fluids, Langevin equations and dynamical critical phenomena.

In 1978 B.T. Matthias spent some time at the University of Geneva. A fruitful collaboration on the p-state pairing and itinerant electron ferromagnetism and antiferromagnetism emerged, a field that still retains Charles attention. Furthermore he continued to edit and comment Pauli's work and turned his attention to problems of a rather epistemological nature.

Since the beginning of his professoral career Charles Enz developed a successful teaching activity. Students of the "Troisième Cycle de Physique" appreciated and benefitted from his lectures on field theory and current algebra, magnetism and many other subjects. His numerous PhD students testify to his popularity in and outside Geneva, both for his scientific standards and his human qualities. His teaching not only aims at transmitting knowledge and understanding of a particular subject but also has a definite interdisciplinary flavour. He tries to give his students a historical understanding, in conformity with his own tendency to look at physics as a part of human culture. Charles Enz enjoys worldwide recognition as a scientist and a teacher. He has been invited to conferences, schools and workshops all over the world.

He also has not neglected the often demanding administrative part of his profession. He has been president of the "Troisième Cycle de Physique", and president of the "Ecole de Physique" of the University of Geneva. At present he is director of the

theoretical physics department.

Looking back at this biographical note, one cannot help but being struck by the variety of Charles' interests. This is hopefully reflected in the choice of the contributions to the 9th Gwatt workshop. Celebrating in this manner the anniversary of a scientist has often the flavour of the end of a career. For all of us (and we are numerous) who know Charles, know the alertness of his mind, his avid interest for physics and generally for many aspects of culture, the meaning of this jubilee is simple. We just want to congratulate and thank him, thank him in particular for his stimulating enthusiasm and his never relaxing interest for the work of his students and colleagues.

#### Acknowledgement

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