Prof. Dr. Willem de Boer

11.02.1948 – 13.10.2020

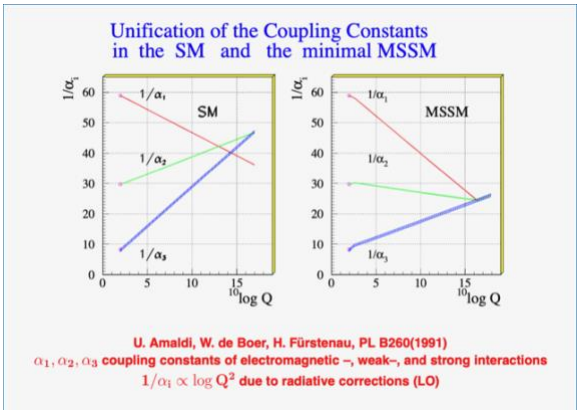

Foto: Manuel Balzer, KIT

It is with great sadness that we have to inform you about the unexpected passing of our dear colleague and friend Prof. Dr. Willem ("Wim") de Boer on October 13, at the age of 72.

Wim was born on the 11th of February 1948 in Steenwijkerwold, the Netherlands. He studied physics at the University of Delft and graduated in 1974 on the subject of "Dynamic Orientation of Nuclei at Low Temperatures", giving the foundation of polarized targets in High Energy Physics. He was awarded a CERN Fellowship, before leaving to the University of Michigan, Ann Arbor. As a postdoc of U. Michigan he worked on polarized proton-proton scattering at the ANL synchrotron and found an unexplained difference in the cross sections for parallel and antiparallel spins. Maybe this mystery influenced his scientific path – investigating unexplained processes in Nature.

In 1975, Wim moved on to the Max Planck Institute for Physics in Munich where he stayed, interrupted by a short intermezzo at SLAC in 1987, for 14 years, until he was attracted to a professorship at the University of Karlsruhe (now Karlsruhe Institute of Technology). In Munich he joined the team working on the CELLO experiment at DESY. His responsibility for the Data Acquisition System lead to a paper by him in 1981 with the title "Distributed Intelligence at CELLO", which still sounds quite topical these days. But the CELLO years were also instrumental for precision studies of QCD, out of which the triple gluon coupling on the one hand and the running of the strong coupling constant on the other emerged – a subject Wim has been pursuing ever since.

Following his appointment to a professorship at Karlsruhe in 1989, Wim created research groups at the LEP experiment DELPHI, at the experiment AMS II on the International Space Station, and he coordinated a group at the CMS experiment at the CERN LHC. Having studied the running of the coupling constants of the weak, electromagnetic and strong interactions, Wim has found, together with U. Amaldi and H. Fürstenau, that these were only to meet in a unified way at high energies if yet another kind of symmetry existed in Nature: Supersymmetry (SUSY). This was published in the seminal paper "Comparison of grand unified theories with electroweak and strong coupling constants measured at LEP", and led to the expectation that a new energy domain would open up at the TeV scale with the lightest SUSY particle constituting Dark Matter in our Universe. The paper has been cited almost 2000 times.



To each of the above mentioned experiments mentioned, Wim has contributed with a multitude of ideas, studies and publications. In doing so, Wim was driven by the ONE big question: “Where is Supersymmetry?”. He looked for signals of Dark Matter at the lowest energies in our galaxy (in the form of annihilation signals of Weakly Interacting Massive Particles), at signals from direct production at LEP and at the LHC, and in anomalous decay modes of bottom mesons. A large conference organized by Wim 2007 in Karlsruhe was devoted to this research field.

Reviewing all experiments Wim has contributed to in his almost 50 years of scientific work, it is our belief that he was most fascinated by AMS II. Not only did he and his group contribute an electronic readout system to the detector, he also saw it take off from Cape Canaveral with the penultimate Space Shuttle flight in 2011, celebrated by the visit of the whole crew of astronauts in Karlsruhe in December 2011.

Last not least, Wim has developed sophisticated particle detectors for all the named experiments and studied their performance in magnetic fields and high radiation backgrounds. Wim has worked with detectors using gases, liquids, silicon and diamonds. And he investigated their use for medical and technical application. His last R/D effort began only a few weeks ago: the development of a novel cooling system for high density batteries.

With Wim’s passing, our field has lost a great all-round physicist with unparalleled creativity and diligence, with a warm collegiality and a very characteristic dry humour. Well aware of his rapid illness, his last words to his family were: “Hij gaat nog niet, want hij heeft nog zoveel ideeën!”. We will miss him deeply.

Our heartfelt sympathy goes out to Wim's family.

For the members of the Institut für Experimentelle Teilchenphysik and of the Faculty of Physics at KIT,

Guido Drexlin, Thomas Müller

Karlsruhe, 15th of October 2020