

## In Memoriam: Jan Blomqvist (1932-2022)

Jan Blomqvist, professor emeritus in theoretical nuclear physics at the Royal Institute of Technology (KTH), Stockholm, passed away on 16 October 2022 in his home at Stockholm. He was born also in Stockholm on 18 May 1932.

Jan Blomqvist was widely respected and renowned internationally for his work on nuclear shell structure. He was also a highly appreciated colleague, for his friendliness and for his deep insights in Quantum Physics.

Jan began his career as a doctoral student at the Nobel Institute for Physics, Stockholm, in the 1950's. Soon he published his first work on the structure of the nucleus  $^{209}\text{Pb}$ , of particular interest for understanding nuclear structure. This work received immediate international resonance and was later quoted even in textbooks. After his PhD which he obtained in 1960, Jan was provided a fellowship to work at the University in Birmingham with Professor Gerry Brown, one of the leading theoretical nuclear physicist at the time, thus starting a long collaboration and friendship that lasted until Gerry passed away in 2013. In 1961-1962 Jan continued his collaboration with Gerry (who had become NORDITA professor in 1960) in Copenhagen where he also started a collaboration and friendship with Aage Bohr and Ben Mottelson. In 1964 Jan went to Stony-Brook National Laboratory, Long Island, New York, where he continued his collaboration with Gerry Brown (then professor at Princeton) and as well as other leading theoretical nuclear physicists, in particular Akito Arima. Much later, when Arima was the Vice Chancellor of Tokyo University, he attended a meeting organized by the Stockholm University to discuss collaboration prospects. In the reception arranged in Arima's honor Jan was invited as an extraordinary guest. At Stony-Brook Jan developed, together with Tom Kuo, an effective nucleon-nucleon interaction which became widely used for realistic nuclear structure calculations. In 1974 he worked at CERN performing theoretical work and supporting the experimental activities at the ISOLDE facility that had just started. Jan's fruitful collaborations with leading experimental physicists are particularly noteworthy. In this context it is worthwhile to mention his work together with Peter Kleinheinz at Julich, where outstanding research was performed. Kleinheinz sometimes visited Stockholm and would lock himself with Jan in an office to discuss physics. When asked why he "kidnapped" Jan in such a fashion Kleinheinz replied that it was a rare occasion when he could enjoy listening to a Master speaking with profound clarity and precision.

Even other German researchers, like Hubert Grawe, were very impressed with Blomqvist work; Grawe used to say that beyond the physics that Jan was developing it was art.

Blomqvist had a particular fondness for physics in the Nordic Countries, which he encouraged through his position as Nordic Program Committee member in NORDITA. Particularly in Oslo with Osnes and one of us (MHJ) who had Blomqvist as opponent in his PhD thesis.

The quality of the work of Jan Blomqvist was emphatically expressed by an international committee evaluating the research groups in Sweden for the National Research Council. It was said that the research work of Blomqvist "is already classical".

Jan remained active after his formal retirement in 1997, even working extensively from home. He considered this more as a hobby than work but yet took it quite seriously and contributed to outstanding research also during his post-retirement years. An example of this was his realization that in the nucleus  $^{92}\text{Pd}$  and heavier spherical self-conjugate nuclei special, isoscalar, neutron-proton correlations should manifest themselves as a new spin-aligned proton-neutron paired phase. Evidence for this effect was identified by the KTH group and collaborating physicists at the accelerator laboratory GANIL, France and published in the scientific journal Nature in 2011, fourteen years after Jan's formal retirement.

We are happy and thankful for having had the privilege of been part of his collaborators.

Jan is survived by his three sons and their families. He will be deeply missed also by his many friends and colleagues.

Bo Cederwall, Roberto Liotta and colleagues at the Nuclear Physics Division, KTH Royal Institute of Technology, Stockholm, and Morten Hjorth-Jensen, Michigan State University, USA and University of Oslo, Norway