

Franco Brandolini

We would like, in this occasion, when Franco is completing 65 years and is retiring as a professor at the University of Padua, to make an small tribute and thank him for the important contribution he has given for the development of our group of research.

I met Franco Brandolini for the first time in October 1989, when I went for my first visit to the *Laboratori Nazionali di Legnaro*, and the *Università di Padova*, in Italy, soon after the establishment of an international cooperation agreement between the USP – *Universidade de São Paulo* and INFN, - *Istituto Nazionale di Fisica Nucleare* - the sponsor of the *Laboratories of Legnaro*. At that time we were starting a project for the measurement of nuclear magnetic moments, using the technique based on the so-called *Transient Magnetic Field*. The master's thesis of Nilberto Medina was exactly on the implementation of this method of measurement in our laboratory. In May 1989, came to São Paulo, a mission of INFN to address the cooperation agreement. I met at that time Prof. Piero Dalpiaz, then the Director of the *Laboratori di Legnaro*. I told him about the interest we had in magnetic moments and that I would like to start a collaboration with the Italian group of Padua/Legnaro, one of the most active in the area. He invited me to a short visit for recognition and then I made the first contacts with Franco Brandolini, Carlo Rossi Alvarez, Dino Bazzaco, Piero Pavan, Mario De Poli and other members of the group GAMPE. We agreed about my visit, for one year, to begin in January the following year. Me, my wife and our two daughters stood a very nice year in Italy. With Franco and his group, we conducted beautiful experiments, for very precise measurements of giromagnetic factors of states of high angular momentum in deformed nuclei. The technique developed by the Italians, using targets made with mixture of enriched isotopes of Gd or Dy, allowed simultaneous measurements for different isotopes, and so, without systematic errors. I finished at that time, my data analysis program (MAGMO), which was perfectly suited for those measures, providing simultaneous analysis of data from different measurements with different beams or bombarding energies. Late at that year, big changes were starting up in Legnaro, with the construction of GASP, the first of the last three most sophisticated gamma-ray spectrometers up to now in operation (after came Euroball and Gamma-sphere). Franco surely preferred the experiments with a small group of researchers, four detectors, with 25% efficiency, instead big collaborations, complex instruments (GASP have 40 Ge detectors, each with 80%, with anti-Compton, etc.). Many new ideas, as the search for super and hyper-deformation, production of super-heavy, were object of research with the new instrument, and of course he gave a lot of contribution to that. With GASP we did one of the first measurements - if not the first - of the magnetic moment of super-deformed states. About ten years after the start of GASP,

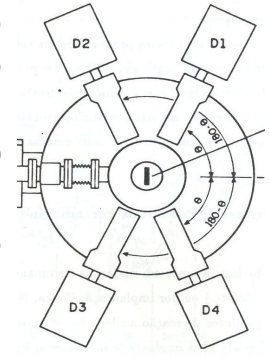
appears in the market a powerful software for calculations of nuclear structure - the code Antoine - based in what is called *Large Scale Shell model*, that, with the new available computer resources, made possible to describe, in detail, the nuclear structure in fp-shell (A-50). Franco then found another important and interesting branch of nuclear physics, in which could give - and indeed has given - an enormous contribution. He new the fundamentals of that theory as few - it was subject to his doctoral thesis - done many years ago in Germany. Again, his concern for accuracy of experimental measurements were applied in the measurements of short lifetimes of excited states ($\sim 1\text{ps}$) in that region of mass, and his theoretical knowledge became very useful in the interpretation of properties of collective states in terms on the superposition of a large number of interacting particles. For this application, he developed a new technique for data analysis, the so-called GTB - "*Gate on transition bellow.*" My name also appears in the article describing this innovation, but only for my (small) contribution to the implementation of the new analysis technique in a computer data analysis program.

I have been in Legnaro every year since then, for this collaboration with Franco and other researchers that use the instruments available at that laboratory. Every weekend, with Franco and his wife Marina, is another detail, not less important of my relationship with them. Here, his general culture, his deep knowledge of European culture and civilization (and also of Marina), always were of grate value for me. To visit the beautiful places in the neighboring of Padua, with a couple of friends telling you about its history, culture, religious and political aspects, is nothing I could do by any other means. If Franco decided to be a historian rather than a nuclear physicist, he would have a career at least as fruitful. Besides that, it seams the he is now getting more "physical" than physicist. He is now one of the best in the "*Voga alla Venneta*", (at least for people of his age). *Voga* the way Venetians like him row their boats, as you can see in this short video take by Nilberto in Padua, last July.

Many people of our group also had the opportunity to collaborate with Franco and his group: Nilberto Medina spent a long period in Legnaro for his pos-doc, mainly working with Franco. Narayana Rao, José Roberto Oliveira, Márcia Rizzutto, Marcilei da Silveira, Kenya Wiedemann, were also in Legnaro and at least for part of the time interacted with Franco Brandolini. Ewa Cybulska, Wayne Seale and others, also had that opportunity, during his visits to Brazil.

I would like now to ask Nilberto Medina to hand to Franco, a commemorative tablet celebrating this occasion.

Caro Franco,
Esta singela homenagem é o nosso reconhecimento pela enorme contribuição que você tem dado, ao longo de muitos anos, ao desenvolvimento da Física Nuclear. E também pela amizade que nos une há duas décadas.
Grupo γ
São Paulo, 10 de setembro de 2008.



T'ung Jên / Fellowship with Men

True fellowship among men must be based upon a concern that is universal. It is not the private interests of the individual that create lasting fellowship among men, but rather the goals of humanity.

A verdadeira comunidade entre os homens deve basear-se em interesses de caráter universal. Não são os propósitos particulares do indivíduo, mas os objetivos da humanidade que criam uma comunidade duradoura entre os homens.