

## 2008 André Lagarrigue Prize



Under the sponsorship of the French Physics Society (SFP) and on the occasion of the 50th birthday of the Orsay Linear Accelerator Laboratory (LAL) in 2006, a new prestigious Prize, with an award amounting to 3000 €, was created in honor of Professor Andre Lagarrigue. Director of LAL from 1969 until his untimely death in 1975, Andre Lagarrigue discovered in 1973 neutral currents of the weak interaction, a crucial step in establishing the present theory of particle physics. The André Lagarrigue Prize rewards a senior physicist who has lead the construction of an important experimental apparatus, who has extracted the best of it with a strong team spirit and has carried out his work in a French laboratory or in close collaboration with French teams. This prize is co-financed by the CEA, CERN, Ecole Polytechnique, IN2P3, LAL and the University Paris Sud 11.

The international jury of the Andre Lagarrigue Prize<sup>1</sup> met under the chairmanship of IN2P3 director Michel Spiro, and reviewed 10 nominees proposed by the French community of particles physics following a call for proposal sent to all French lab directors.

The winner of the 2008 Andre Lagarrigue Prize is **Pierre Darriulat**, physics professor at VATLY laboratory in Hanoi (Vietnam) and former Research Director at CERN. Pierre Darriulat is one of the uncontested world wide leaders in particle physics, and his exceptional career is by all means worthy of Andre Lagarrigue's. He has the same qualities of a complex experimental device builder, with an acute physics comprehension and the same communicative enthusiasm and passion for training younger people.

Born in 1938, of french citizenship, former student of Ecole Polytechnique, Pierre Darriulat earned his PhD degree from Université de Paris in 1965. He worked at Atomic Energy Agency (CEA) from 1960 to 1966 on pioneering scattering experiments using polarised protons and neutrons. He spent two years at LBL (Berkeley) from 1962 to 1964. Pierre Darriulat then joined CERN, which he would only leave upon retirement, and where he obtained his training in particle physics in the group of C. Rubbia.

Pierre Darriulat rapidly becomes one of the best world experts in proton-proton collisions produced by the ISR machine. These experiments will enable Pierre Darriulat to conceive and design the UA2 detector, one of the two large experiments to be installed at the SppS collider at CERN.

Spokeperson of this collaboration from 1980 to 1986, Pierre Darriulat builds a very original detector with an excellent calorimetry and no internal magnetic field.



This audacious bet turns out as a winning one, since as early as in 1982, UA2 experiment observes for the first time high transverse momentum jets produced in proton-antiproton collisions and W and Z bosons in 1983. This brilliant experimental confirmation of the existence of the weak force carriers definitely establishes the particle physics Standard Model and puts a final touch to André Lagarrigue's work who had, 10 years earlier, observed the weak force neutral currents induced by the Z boson. This major discovery, made jointly with the UA1 experiment, enables the award of the first Nobel Prize to CERN physicists in 1984: C. Rubbia and S. Van Der Meer, the SppS machine designers. As Research Director at CERN from 1987 to 1994, Pierre Darriulat superbly oversees the experimental program at the new CERN machine, LEP, a giant 27 kms long  $e^+e^-$  collider. Pierre Darriulat tirelessly develops new superconducting cavities needed to increase the energy of these collisions. Thanks to this effort, LEP will be able to go beyond 200 GeV and to give the best constraints on the only missing piece of the Standard Model, the Higgs boson.

This exceptional harvest would by itself justify this award but Pierre Darriulat enthusiastically continued his builder and trainer career, working again after his retirement in Hanoi where he currently teaches astrophysics. He created and currently leads the VATLY laboratory, looking for ultra high energy cosmic rays in association with the Pierre Auger Observatory. Pierre Darriulat was a member of numerous distinguished international committees all over the world and becomes in 1986 a corresponding member of the French Science Academy. He is also an author of many books dealing with the science-society relationship such as "Reflections on contemporary science » published in 2007.

It is thus with an immense pleasure that the jury awards the 2008 André Lagarrigue prize to Pierre Darriulat, an excellent physicist of the same stature than his famous elder.

---

<sup>1</sup> The jury members are:

M. Spiro (*IN2P3, president*), J.J. Blaising (*CERN*), J.C. Brient (*Ecole Polytechnique*), E. Fiorini (*INFN - Milan*), J. Iliopoulos (*ENS - Paris*), G. Kalmus (*RAL*), M. Leduc (*SFP*), D. Leith (*SLAC*), M.N. Minard (*LAPP*), V. Ruhlmann-Kleider (*DAPNIA/CEA*), A. Wagner (*DESY*), G. Wormser (*LAL*) and F. Zomer (*Université Paris Sud 11*)