KONSTANTIN GOULIANOS

Research Highlights

(Selected topics and references)

1. Discovery of the muon-type neutrino (Brookhaven National Laboratory):

   - *Observation of High-Energy Neutrino Reactions and the Existence of Two Kinds of Neutrinos*
     G. Danby, J.-M. Gaillard, K. Goulianos, L.M. Lederman, N. Mistry, M. Schwartz and J. Steinberger, Physical Review Letters 9 (1962) 36
     $\Rightarrow$ **1988 Nobel Prize** to L. Lederman, M. Schartz and J. Steinberger
   - *Experimental Proof of the Existence of Two Neutrinos*
     Ph. D. Thesis, Columbia University, June 1963

2. Limits on time-reversal invariance (Princeton-Pennsylvania Accelerator):

   - *Experimental Test of Time-Reversal Invariance in the Decay* $K_L^0 \to \pi^- \mu^+ \nu$
     D. Bartlett, C.E. Friedberg, K. Goulianos and D. Hutchinson
     Physical Review Letters 16 (1966) 282

3. Discovery of neutrino-proton elastic scattering (Brookhaven National Laboratory):

   - *Observation of the Reaction* $\nu_\mu + p \to \nu_\mu + p$
     A. Bross *et al.*, Physical Review Letters 37 (1976) 186

4. Measurements of elastic, diffractive and total hadronic cross sections (Fermilab):

   - *Diffractive Interactions of Hadrons at High Energies*
     K. Goulianos, Physics Reports 1 (1983) 169-219

5. First observation of photon diffraction dissociation (Fermilab):

   - *Diffraction Dissociation of Photons on Hydrogen*
     T. Chapin *et al.*, Physical Review D31 (1985) 17

6. Hard diffraction measurements (Fermilab) and phenomenology:

   - *Diffractive Dijets with a Leading Antiproton in* $\bar{p}p$ *collisions at* $\sqrt{s} = 630$ *and* 1800 *GeV*
     T. Affolder *et al.*, Physical Review Letters 84 (2000) 5043
   - *Renormalization of Hadronic Diffraction and the Structure of the Pomeron*
     K. Goulianos, Physics Letters B 358 (1995) 379-388; *ib.* B 363 (1995) 268

7. Discovery of the Top Quark (Fermilab):

   - *Observation of Top Quark Production in* $\bar{p}p$ *Collisions with the Collider Detector at Fermilab*
     F. Abe *et al.*, Physical Review Letters 74 (1995) 2626-2631