

SEMINARS SEMINAIRES

Monday 22 July

TECHNICAL PRESENTATION

at 10.00 hrs - CN Auditorium, bldg 31/3-004 & 5

The Aldor Programming Language : Reconstructing an Algebra System from Elementary Particle

by Stephen WATT / University of Nice-Sophia
Antipolis & The Numerical Algorithms Group Ltd
(NAG)

This talk presents a high-level view of Aldor, the new programming language used to extend the Axiom algebra system.

The formulation of the programming language has tried to balance the mathematical desire for generality and uniformity, on one hand, with the practical requirements of the most demanding symbolic and numeric computation, on the other. For example, types and functions are first class values, and dependent types are fully supported, but their precise formulation has been carefully arranged to allow effective compilation and optimisation.

The basic semantic elements of the language are highly orthogonal and can be combined in quite powerful ways. Several trendy styles of computing can be reconstructed in this manner.

The Aldor compiler can be used to generate code which runs within the Axiom system, separately, or linked into other applications.

Organiser : S. Cannon / CN / 5036

Wednesday 24 July

THEORETICAL SEMINAR

at 14.00 hrs - TH Conference Room

Little miracles of supersymmetric evolution of the gauge couplings

by M. SHIFMAN / CERN

The invention of supersymmetry almost exactly 25 years ago changed the face of high-energy physics. The idea that the observed low-energy gauge groups appear in the process of the spontaneous breaking of a single unifying group G is also quite popular. The synthesis of these two elements results in supersymmetric grand unification. I present (perturbatively) exact results regarding the supersymmetric evolution of the gauge couplings from the scale of their unification to lower scales. In particular, it is shown how the heavy mass thresholds can be properly taken into account.

Friday 19 July

MEETING ON PARTICLE PHYSICS PHENOMENOLOGY

at 14.00 hrs - TH Conference Room

Orbital parton motion and QCD evolution of the nucleon's spin

by Pervez HOODBHOY / Quaid-e-Azam University, Islamabad

I shall explore the role of orbital momentum in QCD and, in analogy to the Altarelli-Parisi equation for the quark and gluon helicity contributions to the nucleon spin, derive an evolution equation for the quark and gluon orbital momenta. The solution of the combined equations yields the asymptotic fractions of the nucleon spin carried by quarks and gluons - a result which is model independent and rooted in QCD. I shall further show that the axial-anomaly contribution to the quark helicity is cancelled by a similar contribution to the quark orbital angular momentum, making the total quark contribution to the nucleon spin anomaly-free. Finally, I shall briefly discuss a possible experiment to measure the quark orbital contribution to the proton spin.

EDUCATION SERVICES EDUCATIFS

This week

Mon. 22 July	09.15	H.J. Hilke	Particle Detectors (1/6)
	10.15	H.J. Hilke	Particle Detectors (2/6)
	11.15	—	
Tue. 23 July	09.15	H.J. Hilke	Particle Detectors (3/6)
	10.15	H.J. Hilke	Particle Detectors (4/6)
	11.15	J. Jowett	Particle Accelerators (1/5)
Wed. 24 July	09.25	J. Jowett	Particle Accelerators (2/5)
	10.15	H.J. Hilke	Particle Detectors (5/6)
	11.15	M.W. Krasny	Deep Inelastic Lepton Scattering (1/3)