

The dawn of supersymmetry

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How with John Schwarz we discovered what was to become the Neveu-Schwarz string is the result of a rather unlikely sequence of four coincidences.

I was finishing my Ph.D. with Joël Scherk, and we were both much interested in going to the States, and continue working together on dual models where the activity was exploding.

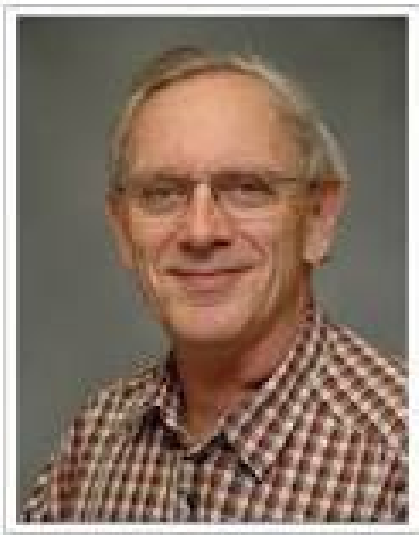


Coincidence number 1 in 1968-1969

A chance encounter with another scientist on the train from Orsay to Paris enabled us to do that: a Procter fellowship for me, a NATO fellowship for Joël to both go to Princeton.

Coincidence number 2 in 1968-1969

I had already heard (in very positive terms) about **Pierre Raymond** from Jean Nuyts (then in Orsay), with whom he had already signed the papers (without having met) on crossing symmetric partial waves amplitudes which formed the basis of Pierre's Ph.D. in Syracuse with A.P. Balachandran as adviser.



September 1969, coincidence number 3, the most remarkable

My encounter with Pierre Ramond on the ship "France"



The Fubini-Veneziano paper

Level structure of dual-resonance models, S. Fubini and G. Veneziano, Nuovo Cim. A64 (1969) 811-840

was a main actor in this encounter!

Coincidence number 4, september 1969

Arriving at Princeton, I had my first encounter with John Schwarz



who was supposed to supervise my research.

In 1970, I went back to Princeton, and with John got interested in introducing spin $1/2$ in dual models. We were not the first!

New dual quark models K. Bardakci, M.B. Halpern, Phys.Rev. D3 (1971) 2493

actually a pioneering work in several aspects

Then, I received Pierre's paper as a preprint

Dual Theory for Free Fermions

Pierre Ramond, Phys.Rev. D3 (1971) 2415-2418

Quark Model of Dual Pions, A. Neveu, J.H. Schwarz Phys.Rev. D4 (1971) 1109-1111.

C. Lovelace, Phys. Lett. 28B, 264 (1968); J. Shapiro, Phys. Rev. 179, 1345 (1969).

The Neveu-Schwarz string in the “ F_1 ” formalism

Factorizable dual model of pions, A. Neveu, J.H. Schwarz Nucl.Phys. B31 (1971) 86-112.

The Neveu-Schwarz string in the “ F_2 ” formalism where ghost elimination is manifest

Reformulation of the Dual Pion Model A. Neveu, J.H. Schwarz, Charles B. Thorn Phys.Lett. 35B (1971) 529-533

From supergauges to supersymmetry

Field Theory Interpretation of Supergauges in Dual Models Jean-Loup Gervais, B. Sakita Nucl.Phys. B34 (1971) 632-639

D. Volkov, V. Akulov JETP Lett., 16 (1972), 621

A Lagrangian Model Invariant Under Supergauge Transformations J. Wess, B. Zumino Phys.Lett. 49B (1974) 52

Back to strings, space-time supersymmetry: The Gliozzi-Scherk-Olive truncation

Supersymmetry, Supergravity Theories and the Dual Spinor Model
F. Gliozzi, Joel Scherk, David I. Olive, Nucl.Phys. B122 (1977)
253-290

From here on, I think Michael Green should take over