cially his puns will remain forever in our memories.

J. Lawrence Katz
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Claude Itzykson

Claude Itzykson died on 22 May 1995 in Paris, at age 57, after a brief but cruel illness. He was a highly respected member of the physics community, and his untimely death, at the peak of his creativity, is a great loss to theoretical physics. Itzykson's recent work, centered around conformal invariant field theories and matrix integrals, was quite mathematical, and Itzykson served as an essential link between the physics and mathematics communities, with interests in the whole range of physics as well as mathematics.

Itzykson graduated from the Ecole Polytechnique in Paris in 1959, and he joined the theory group at the Saclay Center for Nuclear Studies in the suburbs of Paris in 1962. He spent most of his career there, except for numerous visiting positions all over the world that he held throughout his working life.

Itzykson's contributions to theoretical physics range from particle physics to statistical mechanics, from phenomenology to pure mathematics. His talent for discovering beautiful mathematical structures in physical problems was rare; few people have mastered the subtleties of group theory with comparable skill. Of his many publications, let me cite a study of the dynamical O(4) symmetry of the hydrogen atom, his first encounter with conformal symmetry; a study of pair creation by a frequency-dependent electromagnetic field; early studies of the phase structure of non-Abelian gauge fields on a lattice; a study of the Feynman diagrams in the limit of a large number of colors, which turned out 12 years later to be the starting point for the study of dynamically triangulated random surfaces, known as the matrix model of two-dimensional quantum gravity; the phenomenon of roughening of the flux tube in lattice gauge theory; a thorough study of matrix integrals, in particular for two coupled matrices; an exact calculation for the density of states in a disordered system in the presence of a strong magnetic field; the classification of modular invariant partition functions in two-dimensional conformal field theories; a relation between matrix integration and the combinatorics of the modular

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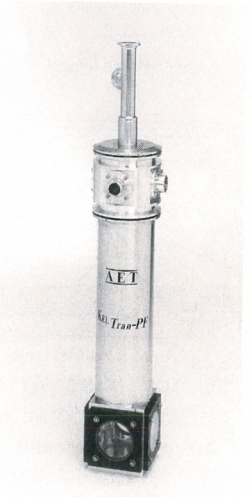

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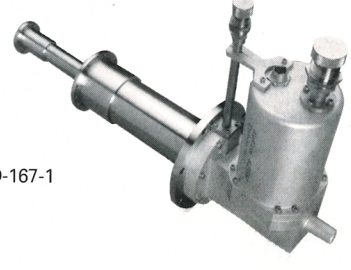

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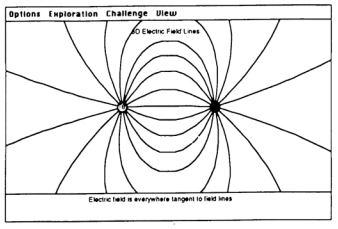

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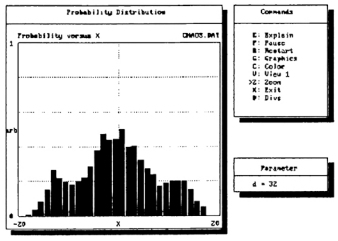

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group; and a mathematical study of the quantum intersection rings.

From spin glasses to number theory, his curiosity and his knowledge were encyclopedic and universal. In 1980 he published with Jean-Bernard Zuber a treatise on quantum field theory that became a classic for all theory students. His two-volume work on statistical field theory, written with Jean-Michel Drouffe, is also a rich source of original information.

Itzykson was an exceptionally inspiring teacher and a driving force within the whole theory group at Saclay. Claude Itzykson had a uniquely warm and enthusiastic personality, which gained him many friends throughout the world. His friends and colleagues will miss him with great sorrow.

EDOUARD BRÉZIN
Ecole Normale Supérieure
Paris, France

Willy Werner van Roosbroeck

Willy Werner van Roosbroeck died on 22 June 1995 at his home in Summit, New Jersey, of complications from prostate cancer. Born in Antwerp, Belgium, in 1913, Willy came to the US with his parents in 1916. He received the AB in 1934 and the MA in physics in 1937, both from Columbia University.

Willy was a member of the technical staff of what is now AT&T Bell Laboratories from 1937 through 1978, first in New York City and then, starting in 1941, at Murray Hill, New Jersey.

During his early years at Bell Labs, Willy did pioneering work on low-defect high-frequency deposited protolithic carbon resistors. During the war years, his projects included the development of a theory to describe the transient behavior of infrared thermistor bolometers.

During the late 1940s he worked on the electron–hole transport theory in germanium, and with William Shockley published a frequently cited paper on the subject. In the 1950s he turned to carrier transport theory in general. Later, he made major theoretical contributions to studies of solar batteries, transport in amorphous semiconductors and relaxation semiconductors—materials in which the dielectric relaxation time exceeds the free carrier lifetime.

The study of relaxation semiconductors was Willy's greatest passion, extending from 1959 to his death. His predictions, made in 1968, were experimentally confirmed, using III–V compounds, in the early 1970s through his collaboration with H. Craig Casey Jr