

International Centre for Theoretical Physics

P.A.M. Dirac Medals

Presentation Ceremony



4 October 1994

P.A.M. Dirac Medals

The Dirac Medals of the International Centre for Theoretical Physics were instituted in 1985. These are awarded yearly to outstanding physicists, on Dirac's birthday - 8th August - for contributions to theoretical physics.

The Selection Committee includes Professors S. Lundqvist, N. Cabibbo, Y. Nambu, E. Witten, S. Weinberg and Abdus Salam. The Dirac Medals are not awarded to Nobel Laureates or Wolf Foundation Prize winners.

P.A.M. Dirac (1902 - 1984)

Paul Adrien Maurice Dirac was born in Bristol in 1902. He studied engineering in his hometown, and obtained his degree in physics and mathematics at Cambridge University where he became professor in mathematics in 1932 in the Lucasian chair which was once of Sir Isaac Newton. After his retirement, Professor Dirac went to live in Tallahassee, Florida, where he taught at the University from 1971 until his death in 1984. A Member of the Royal Society since 1930, he won the Royal Medal in 1939 and the Copley Medal in 1952. He shared the Nobel Prize for Physics with E. Schrödinger in 1933.

Professor Dirac was an honoured guest and a staunch friend of the International Centre for Theoretical Physics in Trieste.

Dirac Medal 1994

Frank Wilczek

Professor Frank Wilczek is honoured today for:

"his contributions to the development of theoretical physics. In 1973 he was one of the discoverers of the phenomenon of "asymptotic freedom" in non-Abelian gauge theories. This fundamental observation - that the effective interaction at short distances becomes weak, even in strongly interacting systems - led to the development of a realistic model for hadron physics. In particular, it provided an explanation of scaling and its logarithmic corrections in hadron physics at high energies. Asymptotic freedom has become a cornerstone of the Standard Model of elementary particles and of the theoretical extensions of this model that aim to unify the fundamental forces.

Wilczek has also made important contributions to the study of particle-like excitations in 2-dimensional systems that obey "fractional statistics". These particles, for which he coined the name "anyons" are now recognized to have a role in phenomena such as the fractional quantum Hall effect."

Professor F. Wilczek was born in New York in 1951. In 1974 he obtained his Ph.D in physics at the University of Princeton. From 1974 to 1981 Professor Wilczek held different positions at the University of Princeton where he became Professor in 1980. From 1980 to 1988 he was Professor at the University of California at Santa Barbara and Member of the Institute for Theoretical Physics at the same University. From 1986 to 1988 he was appointed Regent's Fellow at the Smithsonian Astrophysical Observatory. From 1987 to 1988 he was Visiting Professor at Harvard University. In 1989 Professor Wilczek was appointed Professor at the School of Natural Sciences at the Institute for Advanced Study at Princeton.

Professor Wilczek is member of prestigious societies and editor of many scientific journals. In 1986 he was awarded the J.J. Sakurai Prize of the American Physical Society.

DIRAC MEDALISTS

- 1985 **Professor Yakov Zeldovich**
(Institute for Space Research, Moscow, Russia)
Professor Edward Witten
(Princeton University, USA)
- 1986 **Professor Yoichiro Nambu**
(Enrico Fermi Institute for Nuclear Studies, Chicago, USA)
Professor Alexander Polyakov
(Landau Institute for Theoretical Physics, Moscow, Russia)
- 1987 **Professor Bryce DeWitt**
(University of Texas at Austin, USA)
Professor Bruno Zumino
(University of California at Berkeley, USA)
- 1988 **Professor David J. Gross**
(Princeton University, New Jersey, USA)
Professor Efim Samoilovich Fradkin
(Lebedev Physical Institute, Moscow, Russia)
- 1989 **Professor Michael B. Green**
(Queen Mary College, University of London, UK)
Professor John H. Schwarz
(California Institute of Technology, USA)
- 1990 **Professor Ludwig Dmitriyevich Faddeev**
(Steklov Mathematical Institute, Leningrad, Russia)
Professor Sidney Richard Coleman
(Harvard University, Cambridge, Massachusetts, USA)
- 1991 **Professor Stanley Mandelstam**
(University of California, Berkeley, USA)
Professor Jeffrey Goldstone
(Massachusetts Institute of Technology, Cambridge, USA)
- 1992 **Professor N.N. Bogolubov (posthumously)**
(formerly of the Joint Institute for Nuclear Research, Moscow, Russia)
Professor Yakov G. Sinai
(Landau Institute of Theoretical Physics, Moscow, Russia)
- 1993 **Professor Daniel Z. Freedman**
(Department of Mathematics, MIT, Cambridge)
Professor Sergio Ferrara
(Theory Division, CERN, Geneva)
Professor Peter van Nieuwenhuizen
(Department of Physics, SUNY, Stony Brook)
- 1994 **Professor Frank Wilczek**
(Institute for Advanced Study, Princeton, USA)