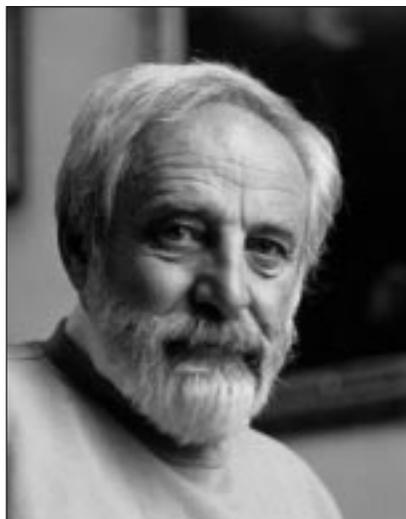


Bott and Serre Share 2000 Wolf Prize



Raoul Bott

RAOUL BOTT and JEAN-PIERRE SERRE will share the \$100,000 Wolf Prize in Mathematics for 2000. Bott is honored “for his deep discoveries in topology and differential geometry and their applications to Lie groups, differential operators, and mathematical physics.” Serre is recognized “for his many fundamental contributions to topology, algebraic geometry, algebra, and number theory and for his inspirational lectures and writing.” The prize is to be conferred by Israeli president Ezer Weizman at a special ceremony in Jerusalem on May 21, 2000.

Raoul Bott

Raoul Bott has been one of the leading figures in differential geometry, particularly in its links with topology and Lie groups. Through his publications, his students, and his personal qualities, he has significantly influenced the mathematics of our times.

Bott’s first major contribution was the application of Morse theory to the topology of Lie groups and homogeneous spaces, culminating in the famous “periodicity theorems” for the stable homotopy of the classical groups. This result provided the foundation for the development of K -theory, to which Bott also contributed greatly, particularly through his joint work with Michael Atiyah on the index theory of differential opera-



Jean-Pierre Serre

tors and its applications to equivariant topology. Bott also obtained seminal results in the theory of foliations. His later work on Yang-Mills theory, moduli spaces of vector bundles, and elliptic genera has been marked by a combination of the same geometric insight, coupled with new points of view coming from mathematical physics.

Raoul Bott was born in 1923 in Budapest, Hungary. After receiving bachelor’s and master’s degrees from McGill University, he received his Ph.D. in 1949 from the Carnegie Institute of Technology. After two years at the Institute for Advanced Study (IAS) in Princeton, he moved to the University of Michigan in 1951. Since 1959 he has been at Harvard University. He is now William Casper Graustein Research Professor. He has also held visiting positions at the IAS and at the Institut des Hautes Études Scientifiques in Bures-sur-Yvette, France. Bott was elected to the National Academy of Sciences of the USA in 1965, and he is an honorary member of the Académie des Sciences de Paris. In 1990 he received the AMS Steele Prize for Lifetime Achievement. He received the National Medal of Science in 1987.

Jean-Pierre Serre

Jean-Pierre Serre is a mathematician of enormous versatility who has had a huge influence on an astonishingly wide range of subjects.

Serre’s initial work in algebraic topology and complex geometry made him the youngest recipient ever of the Fields Medal, in 1954. His application of algebraic methods to infinite-dimensional spaces was to become a major theme in all modern geometry. He transformed algebraic

geometry and commutative algebra through use of sheaf-theoretical and homological methods, constructed the first sheaf cohomology theory in characteristic p , created modern geometric class field theory, and made major contributions to Galois cohomology and to the theory of arithmetic groups. In number theory Serre's influence is inestimable. He introduced the notion of ℓ -adic representations and gave spectacular applications to elliptic curves, abelian varieties, and the theory of modular forms. His conjecture about the modularity of Galois representations was a key step toward the eventual proof of Fermat's Last Theorem.

Through his lectures, books, and courses, each of which is a gem of mathematical exposition and clarity, Serre has inspired generations of mathematicians.

Jean-Pierre Serre was born in 1926 in Bages, France. He studied at the École Normale Supérieure and received his D.Sc. in 1951 from the Sorbonne. After holding a position through the Centre National de la Recherche Scientifique, he was a professor at the Université de Nancy. In 1956 he assumed the position of professor at the Collège de France; he has been an honorary professor there since 1994. Serre is a member of a number of honorary scientific societies in various nations, including the Académie des Sciences de Paris and the National Academy of Sciences of the USA. In addition to receiving the Fields Medal, Serre also won the Balzan Prize in 1985. In 1995 he received the AMS Steele Prize for Mathematical Exposition.

About the Wolf Prize

The Wolf Foundation was established by the late German-born inventor, diplomat, and philanthropist Ricardo Wolf (1887–1981). A resident of Cuba for many years, he became Fidel Castro's ambassador to Israel and held this position until 1973, when Cuba severed diplomatic ties. Wolf decided then to stay on in Israel, where he spent his final years.

Five annual Wolf Prizes have been awarded since 1978 to outstanding scientists and artists "for achievements in the interest of mankind and friendly relations among peoples, irrespective of nationality, race, color, religion, sex, or political view." The prizes of \$100,000 in each area are given every year in four out of five scientific fields in rotation: agriculture, chemistry, mathematics, medicine, and physics. In the arts the prize rotates among architecture, music, painting, and sculpture.

—From Wolf Foundation news releases