Bertrand I. Halperin Biography

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Bertrand Israel Halperin (December 6, 1941—) was born in Brooklyn, New York, USA, the son of Morris Halperin, a customs examiner, and Eva Teplitzky, a college administrator.

Halperin attended public school in Brooklyn before joining Harvard University, where he obtained an AB in Physics (1958-1961) and then stayed on for graduate studies (1961-1962). He then joined UC Berkeley (1962-1965), where he obtained a PhD for a thesis entitled "Theory of the line shape for optical absorption in non-metallic solids," under the supervision of John J. Hopfield. Halperin moved to Princeton with Hopfield in 1964, and then was an NSF postdoctoral fellow (1965-1966) with Philippe Nozières at École Normale Supérieure in Paris, France, before joining the technical staff at Bell Laboratories in 1966. In 1976, he took on a physics professorship at Harvard, where from 1992 to 2018, he held the Hollis Chair of Mathematicks and Natural Philosophy. Since 2018, he is emeritus.

Halperin may be best known for his work on two-dimensional melting, critical dynamics, and the quantum hall effect, but he has also studied various disordered systems over his career, such as percolation and structural glasses. He also worked on the low-temperature properties of spin glasses, and many of his graduate students and postdocs have made significant contributions to the field as well.

Halperin was named fellow of the American Physical Society (1972) and is a member of the National Academy of Sciences (1982). He has received a number of awards, including the APS Oliver E. Buckley Prize (1982) "for his contributions to the understanding of the changes in matter at phase transitions, especially phenomena occurring in magnets, superconductors, and two dimensional solids"; the APS Lars Onsager Prize (2001) "for his wide-ranging contributions to statistical physics and quantum fluids, especially the elucidation of the quantum Hall effect and other low-dimensional electronic phenomena; and for his exemplary leadership in bringing theory to bear on the understanding of experiments"; the Wolf Prize in physics (2002-2003) "key insights in the physics of two-dimensional melting, disordered systems and strongly interacting electrons", and the APS Medal for Exceptional Achievement in Research for "his seminal contributions to theoretical condensed matter physics, especially his pioneering work on the role of topology in both classical and quantum systems." He was also the 2016 Lise Meitner Distinguished Lecturer, giving a lecture entitled "Defects with Character: Zero-Energy Majorana Modes in Condensed-Matter Systems."