William M. FAIRBANK

Publications

At Yale


High Frequency Surface Resistivity of Tin in the Normal and Superconducting States, W.M. Fairbank, Phys. Rev. 76, 1106 (1949)

At Amherst

The Rapid Separation of He\(^3\) from He\(^4\) by the “Heat Flush Method”, T. Soller, W.M. Fairbank and A.D. Crowell, Phys. Rev. 91, 1058 (1953)

At Duke

Temperature Dependence of the Nuclear Susceptibility of \(^3\)He between 1.2 K and 4.2 K. W.M. Fairbank, W.B. Ard, H.G. Dehmelt, W. Gordy and S.R. Williams, Phys. Rev. 92, 208 (1953)

Fermi-Dirac Degeneracy in Liquid \(^3\)He below 1 K, W.M. Fairbank, W.B. Ard and G.K. Walters. Phys. Rev. 95, 566(1954)

Superconductivity at Millimeter Wave Frequencies, G.S. Blevins. W. Gordy and W.M. Fairbank, Phys. Rev. 100, 1215 (1955)

Nuclear Resonance Experiments on Pure \(^3\)He under Pressure, G.K. Walters and W.M. Fairbank, Phys. Rev. 103, 263 (1956)

Phase Separation in \(^3\)He-\(^4\)He Solutions, G.K. Walters and W.M. Fairbank Phys. Rev. 103, 262 (1956)


Nuclear Resonance Experiments in $^3$He-$^4$He Solutions, W.M. Fairbank and G.K. Walters, Proc. Symposium on Solid and Liquid $^3$He, Ohio State University, edited by J.G. Daunt (1957) p 226


Nuclear Resonance Experiments in Liquid $^3$He, by W.M. Fairbank and G.K. Walters Proc. Symposium on Solid and Liquid $^3$He, Ohio State University, edited by J.G. Daunt (1957) p 205


Nuclear Alignment in Liquid and Solid $^3$He, W.M. Fairbank and G.K. Walters, Nuovo Cimento 9, 297 (1958)

Nuclear Alignment in Solid $^3$He, W.M. Fairbank and E.D. Adams, Physica 24, 134 (1958)


Nuclear Resonance in Solid $^3$He, W.M. Fairbank in “Helium Three”, edited by J.G. Daunt, Ohio State U.P. Columbus, 1960 p. 47


At Stanford

(Arranged from Inspec file supplied by Blas Cabrera)


The Nature of the Lambda Transition in Liquid Helium, W.M. Fairbank ;“Liquid Helium” 293 (1963)

The Application of Superconductivity to Electron Linear Accelerators, H.A. Schwettman, P.B. Wilson, J.M. Pierce and W.M. Fairbank International Advances in Cryogenic Engineering A, 88 (1965)


Magnetic Field Penetration Into Superconducting Tin Film Cylinders, E.G. Wilson, and W.M. Fairbank, Proc. 14th International Conference on Low Temperature Physics, Edited by M. Krusius and M. Vuorio, 223 (1975)


PhD Theses

1) At Duke University

01 - G. King Walters (1956), "Nuclear Magnetic Resonance Experiments on $^3$He below 1K

02 - Alexander J. Dessler (1956), "Amplitude Dependence of Velocity of Second Sound"

03 - William D. McCormick (1959), "NMR in Solid Hydrogen Under Pressure"

04 - John N. Kidder (1959), "Critical velocities and Boundary Interactions in Isothermal Flow of Superfluid $^4$He"

05 - Charles Frederick Kellers (1960), "The Specific Heat of Liquid Helium Near the Lambda Point"

06 - John Morton Goodkind (1960), "Nuclear Spin Relaxation in Solid $^3$He" (1960)

07 - Ernest Dwight Adams (1960), "Nuclear Magnetic Susceptibility of Solid $^3$He below 1K (1960) [thesis joint supervision with Horst Meyer]

08 - William D. McCormick (1959), "NMR in Solid Hydrogen Under Pressure"

2) At Stanford University  (List supplied by Blas Cabrera)

01 - Bascom Sine Deaver (1962), Experimental evidence for quantized magnetic flux in superconducting cylinders

02 - Morris Bol (1965), The measurement of the London moment.

03 - Allen M. Goldman (1965), Macroscopic quantum effects in superconducting rings interrupted by insulating junctions

04 - Fred C. Witteborn (1965), Free fall experiments with negative ions and electrons

05 - Larry Vinson Knight (1965), Slow ground state electrons and the anomalous magnetic moment of the free electron

06 - Herbert Daniel Cohen (1966), Nuclear magnetic susceptibility of a dilute solid mixture of He4 in He3.

07 - Walter Joseph Trela (1967), Superfluid helium flow through an orifice

08 - George Burns Hess (1967), Measurements of angular momentum in superfluid helium
09 - John Morley Pierce (1967) - The microwave surface resistance of superconducting lead, trapped magnetic flux, and a new magnetometer using superconductivity

10 - Julian Pierce Webb (1968) - Critical opalescent light scattering in helium3

11 - Paul Bruce Pipes (1969) - Experiments with He3-He4 dilution refrigeration and their application to nuclear magnetic susceptibility measurements in solid He3

12 - Arthur Foster Hebard (1970) - Search for fractional charge using low temperature techniques

13 - John Michael Julius Madey (1970) - I. Emission of slow positrons from dielectric absorbers; II. Statistical variations in the electrostatic potential measured outside of a real conducting surface; III. Stimulated emission of magnetic bremsstrahlung.

14 - Donald Karl Rose (1971) - Superconducting order parameter measurements

15 - Thomas Daniel Bracken (1971) - Comparison of microwave induced constant voltage steps in weakly coupled superconductors

16 - Edmund Perry Day (1972) - I. Search for diamagnetic changes during biomolecular phase transitions; II. Detection of nuclear magnetic resonance using a Josephson junction magnetometer; III. Information content of living systems

17 - Louis Brian Holdeman (1973) - Experimental studies of thin superconducting aluminum films

18 - Kenneth Lee Verosub (1973) - The interaction of acoustic phonons with nuclear spins in solid helium three

19 - Peter M. Selzer (1974) - A study of thermally generated magnetic fields in an anisotropic crystal at low temperatures

20 - Samuel Richard Stein (1974) - The superconducting-cavity stabilized oscillator and an experiment to detect time variation of the fundamental constants.

21 - Ho Jung Paik (1974) - Analysis and development of a very sensitive low temperature gravitational radiation detector

22 - Blas Cabrera (1975) - The use of superconducting shields for generating ultra-low magnetic field regions and several related experiments

23 - Stephen Paul Boughn (1975) - I. The interaction of gravitational waves with matter. II. The design and construction of a cryogenic gravitational wave detector.

24 - John Peter Wikswo (1975) - Non-invasive magnetic measurement of the electrical and mechanical activity of the heart

25 - David Earl Claridge (1976) - Nine Gigahertz impedance properties of point-contact Josephson junctions
26 - Paul Wellman Worden (1976) - A cryogenic test of the equivalence principle

27 - Edward G. Wilson (1976) - Local and nonlocal effects in the penetration of magnetic fields into superconducting tin film cylinders

28 - Philip Leslie Marston (1976) - Part I, Vortex and equilibrium surface profiles of superfluid helium-four: Part II, Tensile strength and visible ultrasonic cavitation of superfluid helium-four

29 - James Marcus Lockhart (1976) - Experimental evidence for a temperature-dependent surface shielding effect inside a copper tube


31 - George S. LaRue (1978) - Measurement of the residual charge on superconducting niobium spheres

32 - Michael A. Taber (1978) - Spin-lattice relaxation of dilute solutions of polarized He³ in liquid He⁴ in low magnetic fields at 4 K; an analysis of a proposed cryogenic He³ nuclear gyroscope and its application to a nuclear electric-dipole moment experiment

33 - Christopher Allen Waters (1979) - Microwave surface impedance studies on copper at low temperature

34 - James N. Hollenhorst (1979) - Signals and noise in the RF squid; Quantum limits in gravity wave detection

35 - Peter Michelson (1980) - Properties of superconducting weak links

36 - Glen Alan Westenskow (1981) - Confinement and thermalization of low energy electrons: the development of a low-energy ground-state electron/positron source

37 - Mark Curtis Leifer (1981) - Superconducting magnetometry for cardiovascular studies and an application of adaptive filtering

38 - Evan R. Mapole – (1981) - Development of a superconducting gravity gradiometer for a test of the inverse square law


40 - James D. Phillips (1983) - Residual charge of niobium spheres

41 - Bruce Evan Moskowitz (1985) - Observations on the Stanford 4800 kg gravity wave detector with a cosmic ray monitor
42 - Barbara Jo Neuhauser (1985) - Construction of an ultralow temperature laboratory; Thermal relaxation in superfluid helium-3

43 - Massimo Bassan (1985) - Cryogenic resonant-mass gravitational wave detectors

44 - Charles Richard Fisel (1986) - A method for fractional charge search using ferromagnetic levitation

45 - Kenneth Wayne Rigby (1986) - Surface cyclotron resonance and anomalies in the surface impedance of metals at low temperature

46 - John Robert Henderson (1987) - Studies of the surface potential inside a copper tube using very low energy electrons

47 - Mark Steven Rzchowski (1988) - Electromagnetic probes of metal and ceramic surfaces at low temperature

**Visitors**

(at Duke):

Robert Romer – Professor at Amherst College-(1957-58)