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[Faculty Directory](#)

[Academic Staff
Directory](#)

[Administrative
Staff Directory](#)

[Pappalardo
Fellows Directory](#)

[Postdoctoral
Scholars](#)

[Departmental
Committees](#)

[Society of
Physics Students](#)

↗

[Physics Graduate
Students Council](#)

↗

[Undergraduate
Women in Physics](#)

↗

[Graduate Women
in Physics](#) ↗

[MIT Association
of Postdoctoral
Scholars](#) ↗

[Alumni & Friends](#)



Faculty

PETER FISHER

Professor and Department Head, Physics



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Related Links:

[Prof. Fisher's Home Page: "The Fisher Files"](#)

[Dark Matter Time Projection Chamber](#)

[CERN: Expert Q&A from Nova ScienceNOW](#)

Area of Physics:

[Experimental Nuclear and Particle Physics](#)

Research Interests

Professor Peter Fisher's main activities are the experimental detection of dark matter using a new kind of detector with directional sensitivity and understanding the weak interactions using tau decays detector with the BaBar detector. His other projects include neutrino physics, wireless power transfer, pedagogical work on electromagnetic radiation and development of new kinds of particle detectors.

Biographical Sketch

Prof. Peter Fisher is a professor in the Physics Department and currently serves as department head. He carries out research in particle physics in the areas of dark matter detection and the development of new kinds of particle detectors. He also has an interest in compact energy supplies and wireless energy transmission. Prof. Fisher received a BS Engineering Physics from Berkeley in 1983 and a Ph.D. in Nuclear Physics from Caltech in 1988.

Selected Publications

- [First Dark Matter Search Results from a Surface Run of the 10-L DMTPC Directional Dark Matter Detector.](#)

[S. Ahlen \(Boston U.\)](#), [J.B.R. Battat](#), [T. Caldwell](#), [C. Deaconu \(MIT\)](#), [D. Dujmic \(MIT, LNS & MIT\)](#), [W. Fedus \(MIT\)](#), [P. Fisher \(MIT, LNS & MIT, MKI & MIT\)](#), [F. Golub \(Brandeis U.\)](#), [S. Henderson \(MIT\)](#), [A. Inglis \(Boston U.\)](#) *et al.*. Jun 2010. 5 pp. Published in **Phys.Lett. B695 (2011) 124-129** e-Print: [arXiv:1006.2928 \[hep-ex\]](#)

- [Neutrino oscillation experiments at the Gösgen nuclear power reactor](#). By Caltech-SIN-TUM Collaboration (G. Zacek et al.). 1986. Published in *Phys.Rev.D* **34**:2621-2636,1986.
- [Final report on the search for neutrinoless double beta decay of Ge-76 from the Gotthard underground experiment](#). By D. Reusser, M. Treichel, F. Boehm, P. Fisher, K. Gabathuler, H.E. Henrikson, V. Jorgens, L.W. Mitchell, C. Nussbaum, J.L. Vuilleumier (Neuchatel U. & Caltech & PSI, Villigen). Oct 1991. 4pp. Published in *Phys.Rev.D* **45**:2548-2551,1992.
- [Search for neutrinoless double beta decay in Xe-136 with a time projection chamber](#). By J.C. Vuilleumier, J. Busto, J. Farine, V. Joergens, L.W. Mitchell, M. Treichel, J.L. Vuilleumier (Neuchatel U.), H.T. Wong, F. Boehm, P. Fisher, H.E. Henrikson, D.A. Imel, M.Z. Iqbal, B.M. O'Callaghan-Hay, J. Thomas (Caltech), K. Gabathuler (PSI, Villigen). 1993. Published in *Phys.Rev.D* **48**:1009-1020,1993.
- [A measurement of tau polarization in Z0 decays](#). By L3 Collaboration (O. Adriani et al.). CERN-PPE-92-132, Aug 1992. 21pp. Published in *Phys.Lett.B* **294**: 466-478,1992.
- [Neutrino mass and oscillation](#). By Peter Fisher (MIT), Boris Kayser (NSF, Wash., D.C.), Kevin S. McFarland (Rochester U.). LNS-99-288, NSF-PT-99-1, UR-1569, MIT-LNS-99-288, Jun 1999. 43pp. Published in *Ann.Rev.Nucl.Part.Sci.* **49**:481,1999. e-Print Archive: [hep-ph/9906244](#).
- Measurements of mass, width and gauge couplings of the W boson at LEP. By L3 Collaboration (M. Acciarri et al.). CERN-PPE-97-098, CERN-PPE-97-98, Jul 1997. 21pp. Published in *Phys.Lett.B* **413**:176-190,1997.
- [Search for anti-helium in cosmic rays](#). By AMS Collaboration (J. Alcaraz et al.). Feb 2000. 18pp. Published in *Phys.Lett.B* **461**:387-396,1999. e-Print Archive: [hep-ex/0002048](#).
- Wireless Power Transfer via Strongly Coupled Magnetic Resonances. Andre Kurs, *et al.* *Science* **83** (2007); 317.

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