

University of Chicago Library

Guide to the Michael Danos Papers 1950-2003



© 2007 University of Chicago Library

Table of Contents

Descriptive Summary	3
Information on Use	3
Access	3
Citation	3
Biographical Note	3
Scope Note	4
Related Resources	4
Subject Headings	4
INVENTORY	5
Series I: Personal Materials	5
Series II: Research and Writing	7
Series III: Lectures & Conferences	12
Series IV: Reprints	14
Series V: Restricted Materials	15
Series VI: Oversize Documents	19

Descriptive Summary

Identifier	ICU.SPCL.MDANOS
Title	Danos, Michael. Papers
Date	1950-2003
Size	15.75 linear feet (29 boxes)
Repository	Special Collections Research Center University of Chicago Library 1100 East 57th Street Chicago, Illinois 60637 U.S.A.

Abstract Michael Danos was a theoretical physicist who worked in photonuclear physics, relativistic heavy ions and x-ray imaging devices, and spent several years as a Visiting Scholar at the Enrico Fermi Institute. The Michael Danos Papers consist of 15.75 linear feet of correspondence, calendars, writings, notebooks, clippings, transparencies, conference materials, photographs, blueprints and diagrams, and computer disks.

Information on Use

Access

Series V (Boxes 20-28) contains restricted material. Much of this material contains legal correspondence, and is therefore restricted indefinitely. Box 28 contains computer disks in obsolescent formats; access requires staff review and possible reformatting.

The remainder of the collection is unrestricted and open for research.

Citation

When quoting material from this collection, the preferred citation is: Danos, Michael. Papers [Box #, Folder #], Special Collections Research Center, University of Chicago Library

Biographical Note

Michael Danos was born in Latvia in 1922, the son of a Hungarian opera singer stranded in that country by the outbreak of World War I. He studied electrical engineering and physics in Riga, Latvia and Dresden, Germany, surviving the 1945 Allied firebombing of Dresden. After the conclusion of World War II he lived in a displaced persons camp in Hanover, and it was while living there that he completed his degrees in electrical engineering and physics.

After immigrating to the United States, Danos did post-doctoral research at Columbia University with Charles Townes, developer of the first laser, from 1952-1954. From 1954-1994 Danos worked for the National Institute of Standards and Technology and the National Bureau of Standards. During the 1950s and 1960s his research focused on photonuclear physics, a field in which it has been claimed he was the most cited author at the time of his death. In the 1970s and 1980s he altered his focus to work on relativistic heavy ions; his studies were important in the development of the heavy ion collider at the Brookhaven National Laboratory in Long Island, New York. By the 1990s, Danos had begun working on quantum computing, but also developed high-caliber x-ray imaging devices through his firm, Rayex Co. He also worked as a visiting scholar at the Enrico Fermi Institute of the University of Chicago.

Danos held eight patents in medical instrumentation and electronics, and was the author or co-author of 5 books and more than 160 articles. He also received numerous scientific awards and served as a visiting professor or scientist at 20 institutions in the United States, Europe, Russia and Australia.

Scope Note

The Michael Danos Papers have been divided into six series: Series I, Personal Materials; Series II, Research & Writing; Series III, Lectures and Conferences; Series IV, Reprints; Series V, Restricted Materials; and Series VI, Oversized Documents. A large portion of the material in the collection focuses on Danos's research in quantum field theory.

Related Resources

The following related resources are located in the Department of Special Collections:

<http://www.lib.uchicago.edu/e/spcl/select.html>

Enrico Fermi Institute. Records

Subject Headings

- National Institute of Standards and Technology (U.S.)
- United States. National Bureau of Standards.
- Angular momentum (Nuclear physics)
- Cold fusion.
- Dissipation (Physics)
- Electromagnetic interactions.
- Field theory (Physics)
- Many-body problem.
- Monte Carlo Method (Computer programs)
- Nuclear structure.
- Particles (Nuclear physics)
- Photonuclear reactions.
- Quantum chromodynamics.

- Quantum field theory.
- Quark-gluon plasma.
- Superheavy elements.
- X-rays.
- Physicists.

INVENTORY

Series I: Personal Materials

This series contains personal materials including personal and professional correspondence, annual date books, photographs, writings from Danos's family members, and assorted memorabilia of professional achievement. Of particular interest is a large amount of writing (what Michael Danos titled "Musings") that outlines his personal thoughts on a wide variety of subjects in science and other fields. These writings are accompanied by an explanatory essay from his wife, Professor Sheila Fitzpatrick. Also included are notices on Michael Danos's death.

Box 1

Folder 1

Correspondence, 1964-1972

Box 1

Folder 2

Correspondence, 1987-1999

Box 1

Folder 3

Correspondence about Fermi Institute appointments, 1980-1998

Box 1

Folder 4

Public correspondence, 1995-1997

Box 1

Folder 5

Theses for which Danos may have acted as outside reader, 1993-1997

Box 1

Folder 6

Two plays by Victoria Danos, 1990-1998

Box 1

Folder 7

Political correspondence and clippings, 1992

Box 1

Folder 8

Information on Santa Fe Schools Restructuring Program, 1989-1991

Box 1

Folder 9

Alexander von Humboldt Prize, 1972

Box 1

Folder 10

Sketches and transparencies, n.d.

Box 1

Folder 11

Columbia University farewell, 1954

Box 1

Folder 12

Guggenheim Fellowship application, 1971

Box 1

Folder 13

Professional biographical information, ca. 1990

Box 2

Folder 1

Personal calendars, 1982-1987

Box 2

Folder 2

Personal calendars, 1988-1993

Box 2

Folder 3

Personal calendars, 1994-1999

Box 2

Folder 4

Personal photographs, 1959-ca. 1980s

Box 2

Folder 5

Personal notes and correspondence, 1983-1989

Box 2

Folder 6

Sheila Fitzpatrick, index to "Science Musings," ca. 2002

Box 2

Folder 7

"Science Musings," 1992-1998

Box 2

Folder 8

Sheila Fitzpatrick, introductory note on "Musings," 2003

Box 2

Folder 9

Sheila Fitzpatrick, index of Michael Danos's "Musings" and "Autobiographical Musings," including reflections on the development of Danos's scientific ideas, ca. 2003

Box 2

Folder 10

"Musings" A-C, ca. 1990s

Box 3

Folder 1

"Musings" D-G, ca. 1990s

Box 3

Folder 2

"Musings" H-M, ca. 1990s

Box 3

Folder 3

"Musings" N-R, ca. 1990s

Box 3

Folder 4

"Musings" S-Z, ca. 1990s

Box 3

Folder 5

Michael Danos, death notices, obituaries, 1999

Box 3

Folder 6

Material on memorials for Michael Danos, 1999-2000

Series II: Research and Writing

This series contains three major types of material, the first of which is a grouping of handwritten scientific notes and calculations from Michael Danos, covering much of his scientific career (1960s-1990s). Also in this series are Danos's own subject files, the largest of which is a series of clippings about cold fusion. Lastly, this series contains a significant amount of manuscript material, including early drafts and handwritten notes for many of his articles. Oversized materials (technical diagrams) have been removed and placed in Series VI.

Box 4

Folder 1

Notes and drafts, n.d.

Box 4

Folder 2

Notebook, n.d.

Box 4

Folder 3

Notebook, n.d.

Box 4

Folder 4

Notebook, n.d.

Box 4

Folder 5

Handwritten notes, n.d.

Box 4

Folder 6

Notes, n.d.

Box 4

Folder 7

Notes, calculations, maps, photocopies, n.d.

Box 4

Folder 8

Notebook, December 27, 1969 - May 30, 1995

Box 4

Folder 9

Notebook, May 20, 1969 - May 10, 1991

Box 5

Folder 1

Notebook no. 1, November 9, 1971 - July 13, 1977

Box 5

Folder 2

Notebook no. 2, July 18, 1977 - April 24, 1989

Box 5

Folder 3

Notebook no. 3, May 6, 1989 - July 14, 1999

Box 5

Folder 4

Analog devices, diagrams of equipment, handwritten notes, ca. 1970s

Box 5

Folder 5

Handwritten notes, 1977-1980

Box 5

Folder 6

Monte Carlo cascade calculation, Tomonaga-Schwinger equation of quantum field theory, notes and drafts, 1978

Box 6

Folder 1

Notes and code printout for MONTE computer program, 1982

Box 6

Folder 2

Handwritten drafts, ca. 1987

Box 6

Folder 3

Dissipation, published article and notes, 1995

Box 6

Folder 4

Computer-generated results, n.d.

Box 6

Folder 5

Untitled diagrams, n.d.

Box 6

Folder 6

Cold fusion, handwritten notes, ca. 1989

Box 6

Folder 7

Cold fusion, articles and clippings, papers, 1989-1990

Box 7

Folder 1

Cold fusion, articles and papers, 1989-1990

Box 7

Folder 2

Cold fusion, articles and clippings, 1989-1990

Box 7

Folder 3

Cold fusion, articles and reports, 1989-1993

Box 7

Folder 4

Cold fusion neutron transfer, articles and clippings, 1991-1992

Box 7

Folder 5

Article on high-tech research, n.d.

Box 7

Folder 6

Analog devices and voltage amplifiers, diagrams, articles, patent information, 1974-1989

Box 7

Folder 7

Physics Today, Vol. 29, No. 7, July 1976

Box 7

Folder 8

National Bureau of Standards information on energy-related inventions, 1979

Box 7

Folder 9

Research notes, correspondence, articles, 1983-1989

Box 7

Folder 10

Topical Proceedings, Industrial Computerized Tomography, July 25-27, 1989

Box 7

Folder 11

Global warming, article, 1989

Box 8

Folder 1

Brochures, Annual Report, Southwest Research Institute, ca. 1990

Box 8

Folder 2

Cosmology, 1990

Box 8

Folder 3

Abstracts and notes, Anomalous Nuclear Effects in Deuterium/Solid Systems, Oct. 22-24, 1990

Box 8

Folder 4

Notes and report on greenhouse effect, 1990

Box 8

Folder 5

Quantum measurement, 1996

Box 8

Folder 6

Particle physics, papers and calculations, 1961-1990s

Box 8

Folder 7

Muon catalyzed fusion, articles, 1986-1990

Box 8

Folder 8

Chaos theory, articles, 1990-1991

Box 8

Folder 9

Quantum physics, offprints and drafts of papers, notes, diagrams, 1972-1998

Box 8

Folder 10

Quantum physics, drafts, notes and offprints of papers, 1948-1997

Box 8

Folder 11

Quantum Physics, drafts of papers, notes, information on conferences, 1996-1998

Box 9

Folder 1

Quantum physics draft articles, ca. 1991

Box 9

Folder 2

"Dissipation in Quantum Physics," submission copy, preprint, article, 1993-1994

Box 9

Folder 3

"Towards a Mathematically Rigorous Formulation of Quantum Field Theory," drafts, calculations, diagrams, transparencies, 1990s

Box 9

Folder 4

"Single Particles and Composite Systems in a mathematically Rigorous Formulation of Quantum Field Theory," n.d.

Box 9

Folder 5

Quantum field theory, drafts, ca. 1990

Box 9

Folder 6

Quantum field theory, notes and drafts, n.d.

Box 9

Folder 7

Quantum field theory typescript, n.d.

Box 9

Folder 8

Quantum field theory, drafts and notes, n.d.

Box 10

Folder 1-2

Q Fields, drafts, n.d.

Box 10

Folder 3

Published letters to the editor, 1965-1982

Box 10

Folder 4

"Measurement in Quantum Physics," manuscripts, n.d.

Box 10

Folder 5

Quark-gluon plasma, papers, manuscripts and drafts, 1982-1984

Box 10

Folder 6

Manuscripts of papers by Danos and others, 1979-1996

Box 10

Folder 7

"Directional Distribution of Reaction Products," draft, January 26, 1995

Box 10

Folder 8

"Dissipation, Entropy, Quantum Physics," transparencies, correspondence, diagrams 1997

Box 11

Folder 1-2

QCD, typescripts of papers and correspondence, ca. 1990s

Box 11

Folder 3

"Giant Dipole Resonance and the Evolution of Concepts of Nuclear Dynamics," drafts, notes, transparencies, n.d.

Box 11

Folder 4

Danos and Tien D. Kieu, "Measurement in Quantum Physics," drafts, transparencies, ca. 1990

Box 11

Folder 5

Articles, notes, drafts, transparencies, 1990s

Box 11

Folder 6

Piezonuclear fusion, non-destructive inspection, drafts of papers ca. 1989

Box 12

Folder 1

Lagrangian Theory, drafts and article, ca. 1981

Box 12

Folder 2

Danos and Ugo Fano, "Graphical Analysis of Angular Momentum for Collision Products," drafts, notes, calculations, 1970-1998

Box 12

Folder 3

Danos and Fano, "Graphical Analysis of Angular Momentum for Collision Products," diagrams, transparencies, drafts, 1997

Box 12

Folder 4

Drafts, ca. 1970s-1993

Box 12

Folder 5

"Chaos and History," drafts, 1996-1999

Box 12

Folder 6

Untitled book on physics for the layman, 2002

Box 12

Folder 7

Manuscripts, 1960s-1990s

Box 13

Folder 1-4

Manuscripts, 1960s-1990s

Box 13

Folder 5

Articles and papers by others, 1977-1996

Series III: Lectures & Conferences

Series III contains material from Michael Danos's own lectures, as well as material from various conferences and talks which he attended. This series contains a large number of handwritten transparencies that were apparently used to accompany his lectures. It contains a number of photographs from scientific conferences from the 1950s-1980s. There is also a significant amount of material on a U.S. government-sponsored scientific trip to the Baltic States in 1992, in which Michael Danos participated.

Box 14

Folder 1

Transparencies, Danos, "Nondestructive Evaluation (NDE) Utilizing X-Ray Backscatter Techniques," September 7, 1989

Box 14

Folder 2

Transparencies of Danos and Balyaev, "Estimate of the Neutron Transfer Fusion Rate," 1991

Box 14

Folder 3

Transparencies, "Mathematically rigorous QFT" and QCD vacuum article, n.d.

Box 14

Folder 4-5

Transparencies, cold fusion, n.d.

Box 14

Folder 6

Transparencies and notes, n.d.

Box 14

Folder 7

Transparencies, Danos, "The Paradox of Entropy Production in Quantum Physics..." n.d.

Box 14

Folder 8

Transparencies of Danos articles, notes, n.d.

Box 14

Folder 9

Danos, "Lectures on Nuclear Structure," 1970

Box 14

Folder 10

Photonuclear physics, "Lectures by Dr. Michael Danos," July 1961

Box 15

Folder 1

Baltic trip, general materials, 1992

Box 15

Folder 2

Baltic trip, Estonian materials, 1992

Box 15

Folder 3

Baltic trip, Latvian materials, 1992

Box 15

Folder 4

Baltic trip, Lithuanian materials 1992

Box 15

Folder 5

Baltic trip, general materials, 1992

Box 16

Folder 1

Conference photographs, ca. 1950s-1986

Box 16

Folder 2

Foreign trip reports, 1978-1985

Box 16

Folder 3

Saclay conference paperwork, 1982

Box 16

Folder 4

Hadronic round table, October 12, 1988

Box 16

Folder 5

Conference paperwork, 1989

Box 16

Folder 6

NIST talk, "Quantum Physics Entropy..." September 10, 1992

Box 16

Folder 7

Bodrum meeting, 1993

Box 16

Folder 8

NATO workshop, hot hadronic matter, June 27-July 1, 1994

Box 16

Folder 9

STATPHYS 20 conference paperwork, 1998

Box 16

Folder 10

Conference materials, 1990s

Series IV: Reprints

This series contains reprints of publications by Michael Danos, ranging in period from the 1950s to the 1990s. Box 17 contains a series of reprints that have been grouped by subject, rather than by chronology.

Box 16 continued

Folder 11

Reprints, 1950-1959

Box 16 continued

Folder 12

Reprints, 1961

Box 16 continued

Folder 13

Reprints, 1960-1965

Box 16 continued

Folder 14

Reprints, 1966-1969

Box 17

Folder 1-11

Reprints by subject, 1957-1998

Box 17

Folder 12-13

Reprints, 1970s

Box 18

Folder 1-9

Reprints, 1970s

Box 19

Folder 1

Reprints, 1980-1985

Box 19

Folder 2-3

Reprints, 1985-1989

Box 19

Folder 4-5

Reprints, 1991-1998

Box 19

Folder 6

Reprints, n.d.

Series V: Restricted Materials

This series contains a variety of restricted materials, primarily legal and financial correspondence as well as referee reports. Box 28 contains 44 computer disks in obsolescent formats. Oversized patent blueprints have been unrestricted, and moved to Series VI.

Box 20

Folder 1

Incompletes, correspondence and drafts of papers, 1961-1994

Box 20

Folder 2

Incompletes, correspondence and drafts of papers, 1968-1987

Box 20

Folder 3

Incompletes, correspondence and drafts of papers, 1983-1994

Box 20

Folder 4

Central rapidity, draft of papers, correspondence, referee reports 1968-1982

Box 20

Folder 5

Physical - spurious, drafts of paper, correspondence, referee reports, 1975-1983

Box 20

Folder 6

Correspondence, 1974-1982

Box 20

Folder 7

Correspondence, 1976-1984

Box 21

Folder 1

Correspondence, 1978-1982

Box 21

Folder 2

Correspondence, 1978-1986

Box 21

Folder 3

Correspondence, 1982-1983

Box 21

Folder 4

Correspondence, 1982-1987

Box 21

Folder 5

Correspondence, 1984-1986

Box 21

Folder 6

Correspondence, 1987-1989
Box 21
Folder 7
Correspondence, 1989-1990
Box 22
Folder 1
Correspondence, 1989-1991
Box 22
Folder 2
Correspondence, 1991
Box 22
Folder 3
Correspondence, 1991-1992
Box 22
Folder 4
Correspondence, 1992-1993
Box 22
Folder 5
Correspondence, 1992-1995
Box 22
Folder 6
Referee Reports, 1990s
Box 22
Folder 7
Outline QF, correspondence, referee reports, and drafts of "Outline for a Mathematically Rigorous Formulation of Quantum Field Theory Based on Generalized Functions," 1991
Box 22
Folder 8
Rafelski, biographical material and letters of recommendation, 1991
Box 22
Folder 9
Travel paperwork, tax forms, royalty information, certificate of naturalization, 1957-1987
Box 22
Folder 10
Soviet Travel, applications, paperwork, correspondence, 1959-1990
Box 22
Folder 11
Identification cards, 1969-1997
Box 23
Folder 1
Travel documents, government travel orders, 1970-1990
Box 23
Folder 2
Receipts, contracts, 1973-1986
Box 23
Folder 3

Checkbook ledgers, 1985-1999

Box 23

Folder 4

Angular Momentum, correspondence and paperwork concerning publication of book, 1990

Box 23

Folder 5

Personnel information: paperwork, evaluations, 1951-1977

Box 23

Folder 6

Personnel action, government personnel paperwork, 1954-1991

Box 23

Folder 7

Administrative, applications, correspondence, forms 1962-1985

Box 23

Folder 8

Personnel paperwork, evaluations, 1964-1993

Box 23

Folder 9

Personnel Administration, performance plans and appraisals, 1976-1991

Box 23

Folder 10

Senior Executive Service (SES), information, financial disclosures, 1978-1994

Box 24

Folder 1

Patent applications and agreements, A-J, 1966-1990

Box 24

Folder 2

Patent applications and agreements, K-Z, 1976-1991

Box 24

Folder 3

Patents, disclosures, designs, applications, correspondence, evaluations, 1989-1993

Box 24

Folder 4

Non-Destructive Inspection of Material with Radiation, patent applications and agreements, 1980-1995

Box 24

Folder 5

Patent applications, designs, correspondence, 1978-1987

Box 25

Folder 1

Optimal High Intensity X-Ray Beam/ Non-Destructive Inspection of Materials with Radiation, applications, correspondence, 1986-1989

Box 25

Folder 2

Photon Counting Structure/ Non-Destructive Inspection/ Piezonuclear Fusion, patent applications, correspondence, agreements, 1967-1989

Box 25

Folder 3

Plans, patent information, 1974-1985

Box 25

Folder 4

Plans patent information, 1941-1985

Box 26

Folder 1

Patent administration, 1975-1996

Box 26

Folder 2

Correspondence, agreements, plans about patents, 1980-1998

Box 26

Folder 3

Patent agreements, applications, plans, 1972-1985

Box 26

Folder 4

Proposals, correspondence, plans, patent applications, photographs, 1970-1985

Box 26

Folder 5

Patents, disclosures, designs, applications, correspondence, evaluations, 1973-1991

Box 26

Folder 6

Patents, disclosures, designs, applications, correspondence, evaluations, 1979-1993

Box 27

Folder 1

U.S. patents for various apparatuses, 1961-1988

Box 27

Folder 2

Filters, plans and calculations, n.d.

Box 27

Folder 3

U.S. patents, 1947-1979

Box 27

Folder 4

Reports, correspondence, patent information, 1937-1984

Box 27

Folder 5

Employment paperwork, 1993

Box 27

Folder 6

Manuscript and referee reports, "Sudden formation of quark-gluon plasma", 1982-1986

Box 27

Folder 7

Royalty information, publishing contracts, 1980-1990

Box 27

Folder 8

Financial information, 1989-1999

Box 28

44 computer disks, mainly 3.5 floppy disks but also several zip disks and a 5.25 floppy, ca. 1979-1999

Series VI: Oversize Documents

This series contains oversized documents transferred from other series. The materials in Folder 1 were removed from Series V, but are themselves unrestricted. Materials in Folder 2 were removed from Series II.

Box 29

Folder 1

Patent blueprints, 1980

Box 29

Folder 2

Diagrams, n.d.