

ERNST MACH LIFE WORK INFLUENCE

International Conference
on the Occasion of the 25th
Anniversary of the Institute
Vienna Circle

5th Anniversary as
Institute of the Faculty
of Philosophy and Education
University of Vienna
<http://mach16.univie.ac.at/>



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Institut
Wiener Kreis
Verein zur Förderung
Wissenschaftlicher
Weltbegriffung

PROGRAMME

June 15–18, 2016
Campus of the
University of Vienna
Österreichische
Akademie der
Wissenschaften
(ÖAW)

Ernst Mach



Ernst Mach (1838–1916) ranks among the most significant natural scientists and philosophers of the 19th and 20th century. In physics paving the way for Einstein's Theory of Relativity and opposing Boltzmann's Atomism, in biology, psychology and physiology pioneering with an empiricism and "gestalthaft" "Analysis of Sensations" in philosophy of science serving as a model for the Vienna Circle with the Ernst Mach Society as well as paving the way for an integrated history and theory of science. His influence extends far beyond the natural sciences – to the Vienna Medical School and psychoanalysis (R. Bárány, J. Breuer, S. Freud), to literature („Jung Wien“, R. Musil), to politics (F. Adler, Austro-Marxism and the Viennese adult education), to arts between Futurism and Minimal Art as well as to social sciences between the liberal school (J. Schumpeter, F. A. von Hayek) and empirical social research (P. Lazarfeld und M. Jahoda). In today's pedagogy, his genetic theory of learning is just as respected as his method in historical epistemology. Mach's international impact already showed during his lifetime, in American Pragmatism (W. James) and French Conventionalism (P. Duhem, H. Poincaré). On the occasion of the centenary of Ernst Mach's death, the Institute Vienna Circle organizes an international symposium on the life, work and influence of this natural scientist and philosopher who worked at the University of Vienna and the Austrian Academy of Sciences for many years and who exerted significant influence on several generations of scholars and scientists as well as of cultural and political agents. The main goal is a critical inventory of Mach's lifework in line with state-of-the-art research and historiography – not least supported by the Ernst Mach Studienausgabe (study edition) and the work in the framework of the newly established Commission for the History and Philosophy of the Austrian Academy of Sciences.

Ernst Mach (1838–1916) zählt zu den bedeutendsten Naturwissenschaftlern und Philosophen des 19. und 20. Jahrhunderts. In der Physik als Wegbereiter von Einsteins Relativitätstheorie und Kontrahent von Boltzmanns Atomistik, in der Biologie, Psychologie und Physiologie als Pionier einer empiristischen und gestalthaften „Analyse der Empfindungen“, in der Wissenschaftsphilosophie als Vorbild des Wiener Kreises mit dem Verein Ernst Mach sowie als Wegbereiter einer integrierten Wissenschaftsgeschichte und Wissenschaftstheorie. Seine Wirkung reicht weit über die Naturwissenschaft hinaus – in die Wiener Medizinische Schule und Psychoanalyse (R. Bárány, J. Breuer, S. Freud), in die Literatur („Jung Wien“, R. Musil), in die Politik (Friedrich Adler, der Austromarxismus und die Wiener Volksbildung), in die Kunst zw. Futurismus und Minimal Art sowie in die Sozialwissenschaften und der empirischen Sozialforschung (P. Lazarsfeld und M. Jahoda). In der heutigen Pädagogik wird heute seine genetische Lerntheorie genauso beachtet seine Methode in der historischen Epistemologie. Machs internationale Wirkung zeigte sich bereits zu Lebzeiten im amerikanischen Pragmatismus (W. James) und den französischen Konventionalismus (P. Duhem, H. Poincaré). Anlässlich der 100. Wiederkehr des Todesstages von Ernst Mach organisiert das Institut Wiener Kreis ein internationales Symposium zu Leben, Werk und Wirkung dieses Naturforschers und Philosophen, der an der Universität Wien und an der Akademie der Wissenschaften viele Jahre lang gewirkt hat und mehrere Generationen in Wissenschaft, Kultur und Politik maßgeblich beeinflusst hat. Zielsetzung ist eine kritische Bestandsaufnahme von Machs Lebenswerk auf dem Stand gegenwärtiger Forschung und Historiografie – nicht zuletzt unterstützt durch die Ernst Mach Studienausgabe und die Arbeit im Rahmen der neu eingerichteten Kommission für Geschichte und Philosophie der Wissenschaften an der Österreichischen Akademie der Wissenschaften (OAW).

Wednesday, June 15

19.00

SIDE PROGRAM / VORPROGRAMM WIENER VORLESUNGEN ZUM 100. TODESTAG VON ERNST MACH (1838–1916)
Universität Wien, Hauptgebäude, BIG 1, Universitätsring 1, 1010 Wien

Friedrich Stadler: Der „Naturforscher“ Ernst Mach (1838–1916) als Grenzgänger und Grenzüberschreiter – Zum Verhältnis von Geistes- und Naturwissenschaften aus heutiger Sicht

Anschließend Podiumsdiskussion mit: **Elisabeth Nemeth, Renée Schröder, Friedrich Stadler**
Moderation: **Hubert Christian Ehalt**

Thursday, June 16

from 8.00

REGISTRATION: AULA AM CAMPUS, SPITALGASSE 2–4, CAMPUS HOF 1.11

AULA AM CAMPUS, CAMPUS
HOF 1.11, SPITALGASSE 2–4

ALTE KAPELLE, CAMPUS HOF 2.8
SPITALGASSE 2–4

SEMINARRAUM I, CAMPUS
HOF 1.6.1, SPITALGASSE 2–4

SEMINARRAUM II, CAMPUS
HOF 1.13, SPITALGASSE 2–4

9.00–09.30

Opening:

Brigitte Mazohl (Vice-President, ÖAW), **Christa Schnabl** (Vice-Rector, University of Vienna), **Elisabeth Nemeth** (Dean, Faculty of Philosophy and Education), **Markus Aspelmeier** (Co-Chair of PC), **Friedrich Stadler** (Local Organizer, Co-Chair of PC)

CHAIR: **Friedrich Stadler**

9.30–10.30

Plenary Lecture: Don Howard (*University of Notre Dame*): Back to the Future: Ernst Mach and Integrated History and Philosophy of Science for the Twenty-first Century

CHAIR: **Bastian Stoppelkamp**

CHAIR: **Christoph Limbeck-Lilienau**

CHAIR: **Hayo Siemsen**

SYMPOSIUM: MACH AND
THE SCHOOL OF BRENTANO

10.30–11.10

Avril Styrman (*University of Helsinki*): Economical Unification in Philosophy of Science

Kevin Mulligan (*University of Geneva*): Claims and their Cash Value

Miloš Kratochvíl (*University of West Bohemia, Pilsen*): Mach and Czech Positivism

11.10–11.30

COFFEE BREAK

SYMPOSIUM: MACH, BRNO, AND
PRAGUE

11.30–12.10

Sandy Berkovski (*Bilkent University*): Some remarks on Mach's Philosophical Doctrines

Denis Fiset (*University of Québec at Montréal*): Brentano's Lecture on Positivism and Monism (1893–1894) and his Criticism of Ernst Mach

Martin Černohorský (*Masaryk University Brno*): Ernst Mach's Early Childhood in Brno and in Zlín. Adolescence in Kremsier

12.10–12.50

Elena d'Amore (*University of Pisa*): Mach's Criticism, or, a Discourse on the Method

Guillaume Fréchette (*University of Salzburg*): From Brentano to Mach. Carving Austrian Philosophy at Its Joints

Emilie Těšínská (*Academy of Sciences of the Czech Republic*): Ernst Mach as an Applicant and the Candidate secundo loco for two

12.50 – 13.30	Carl Henning Reschke (IMFK, Cologne): Links between Mach's Functional Relations, the Systems Approach and the Complexity Perspective	Denis Seron (University of Liège): Intentionality vs. psychophysical Identity	Martin Čermohorský, Marie Fojtíková, Jana Musilová (Masaryk University Brno): Ernst-Mach Days, Bmo 1938, 1988, 2008, 2016
13.30 – 14.30	LUNCH BREAK		
	CHAIR: Thomas Uebel	CHAIR: Günther Sandner	CHAIR: Christian Damböck
14.30 – 15.10	Ursula Baatz (Wien): Ernst Mach: Naturwissenschaft und Buddhismus. Ein Missverständnis unter dem Vorzeichen der Globalisierung	David Romand (Université Paris Diderot): Mach's 'sensations', Gomperz's 'feeling', and the Positivist Debate about the Nature of the Elementary Constituents of Experience. A Comparative Study in Psychological and Epistemological Context	Klemens Rumpf (Karl-Franzens-University, Graz): The First Professorship of Ernst Mach at the Graz Karl-Franzens-University
15.10 – 15.50	Gerhard Donhauser (Wien): Das bedrängte Ich. Ich-Konzepte bei Freud und Mach	John Preston (The University of Reading): Ernst Mach and the Remarks on Science in Wittgenstein's Tractatus	Petra Granitzer (Karl Franzens University, Graz): The Graz Physical Institute after Ernst Mach
15.50 – 16.30		Tomás Hříbek (Academy of Fine Arts): Mach as a Panqualitivist	Rudolf Dvořák (Czech Academy of Science, Prague): Ernst Mach in Prague and the Dawn of Gas Dynamics
16.30 – 16.50	COFFEE BREAK		
	CHAIR: Richard Staley		CHAIR: Hans-Joachim Dahms
16.50 – 17.30	Iulian Toader (University of Bucharest): On the Principle of Permanence as a Principle of Rationality		Sandro Caparrini (University of Torino): Mach in Italy: Giovanni Vailati (1863–1909) as Reader and Interpreter of Ernst Mach
17.30 – 18.20	Lydia Patton (Virginia Tech): Spatiotemporal Continuity in Mach's Economy of Science	CHAIR: Josef Pircher	Michael Stöltzner (University of South Carolina): A History of Divided Reception: The Austrian and the German Mach
19.00	RECEPTION: RATHAUS/TOWN HALL, LICHTENFELSGASSE 2, 1010 WIEN (REGISTRATION REQUIRED)		

ERNST MACH LIFE WORK AND INFLUENCE

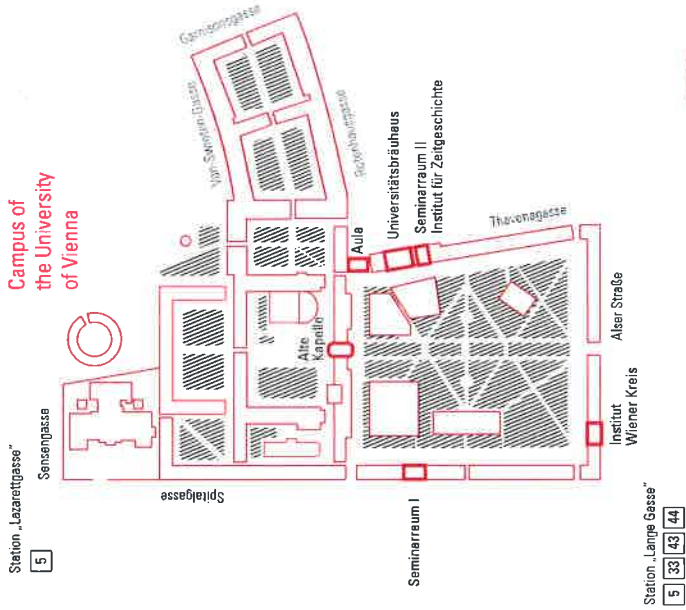
MAIN ORGANIZERS

University of Vienna:
Institute Vienna Circle and Department of Philosophy /
Faculty of Philosophy and Education / Faculty of
Historical and Cultural Studies (Research Focus
"History of Science – Cultures of Knowledge –
Knowledge Societies") / Faculty of Physics, Faculty
of Mathematics / Faculty of Life Sciences / Faculty of
Social Sciences / Faculty of Psychology

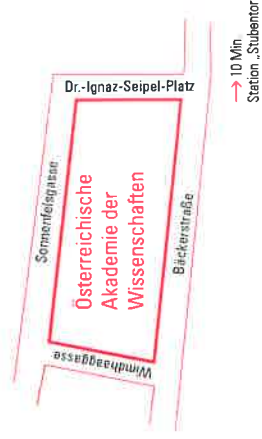
**Osterreichische Akademie der
Wissenschaften (OAW):**
Commission for History and Philosophy of Science /
Institute of Culture Studies and Theatre History

Together with: Max Planck Institute for the History
of Science, Berlin / Deutsches Museum (German
Museum), Munich / Masaryk University, Brno (Ernst
Mach-Days, Brno, February 18–20, 2016) / Université
Paul-Valéry, Montpellier / Moritz Schlick-Forschungs-
stelle, University of Rostock

Campus of
the University
of Vienna



Station „Lange Gasse“
5 33 43 44



Kognito geseftung, Berlin

Friday, June 17

from 8.00

REGISTRATION: AULA AM CAMPUS, SPITALGASSE 2–4, CAMPUS HOF 1.11

AULA AM CAMPUS, CAMPUS HOF 1.11, SPITALGASSE 2–4

ALTE KAPELLE, CAMPUS HOF 2.8, SPITALGASSE 2–4

SEMINARRAUM 1, CAMPUS HOF 1.6.1, SPITALGASSE 2–4

CHAIR: **Katherine Arens**

Michael Heideberger (*University of Tübingen*): What Mach Owes to Fechner and what he Made of it

CHAIR: **Erik C. Banks**

Thomas Uebel (*University of Manchester*): Mach, Jerusalem and Pragmatism

CHAIR: **Anastasios Brenner**

Elisabeth Nemeth (*University of Vienna*): 'Variation' and 'Elements' in Ernst Mach and Otto Neurath

9.50–10.30

Gerhard Benetka, Thomas Sluneko (*Universität Wien*): Ernst Machs Bedeutung für die Herausbildung einer naturwissenschaftlichen Psychologie – Ein Missverständnis mit Folgen?

Pietro Gori (*Universidade Nova de Lisboa*): What does it Mean to Orient Oneself in Science? On Ernst Mach's Pragmatism

Günther Sandner (*Universität Wien*): Spätaufklärung und exakte Wissenschaft. Der Verein Ernst Mach und die Berliner Gesellschaft für empirische/wissenschaftliche Philosophie

10.30–11.10

René J. Campis (*Universidad del Atlántico, Barranquilla*): The Transdisciplinary Legacy of Ernst Mach

Mariana Valente (*University of Évora, Portugal*): "The most artistic lesson I ever heard" – A Contribution to The reflection on the Comment Made by William James Regarding a Lesson by Ernst Mach

Hans-Joachim Dahms (*Berlin*): Ernst Mach and Wilhelm Ostwald Two kinds of Neopositivism and their Influence on the Vienna Circle

11.10–11.30

COFFEE BREAK

11.30–12.10

Markus Schrenk (*University of Düsseldorf*): Ernst Mach on the Self: The Deconstruction of the Ego as an Attempt to avoid Solipsism

Bastian Stoppelkamp (*University of Vienna*): "He hits the target but misses the bull's eye": Ernst Mach, Charles Sanders Peirce and die pragmatische Maxime

Germinal Ladmiral (*Université Paris 1 Panthéon-Sorbonne*): Le monisme peut-il être «neutre»? Les raisons épistémologiques du refus chez Schlick du monisme de Mach

12.10	POSTER SESSION: ERNST MACH AND EDUCATION / MACH AND PHYSICS	
12.10–12.50	LUNCH BREAK	
13.15	GUIDED WALK TO ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN (ÖAW)	
from 13.00	REGISTRATION: AULA, ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN, DR. IGNAZ SEIPEL-PLATZ 2, 1010 WIEN	
	POSTER SESSION CONTINUED (ÖAW): ERNST MACH AND EDUCATION / MACH AND PHYSICS	
	<p>SITZUNGSSAAL, ÖAW DR. IGNAZ SEIPEL-PLATZ 2</p> <p>CHAIR: Klaus Hentschel</p> <p>Peter Christian Aichelburg <i>(University of Vienna):</i> Mach's influence on Einstein's 'biggest blunder' and the Consequences for Modern Cosmology</p>	<p>JOHANNESSAAL, ÖAW DR. IGNAZ SEIPEL-PLATZ 2</p> <p>CHAIR: Petra Granitzer</p> <p>SYMPOSIUM: MACH AND VIENNESE MEDICINE</p> <p>Herwig Swoboda <i>(Krankenhaus Hietzing, Wien):</i> Ein Ohr für Leibniz und Newton – Ernst Machs Beiträge zur Otologie</p>
14.00–14.50	<p>Dennis Lehmkuhl <i>(California Institute of Technology):</i> The Connection Between Mach's Principle and the Relativity Principle in Einstein's work</p>	<p>Michael Matthews <i>(University of New South Wales):</i> On Mach and Education</p>
14.50–15.30	<p>Theodore L. Kneupper <i>(California Institute of Technology):</i> Mach's Views on Physical Space and Time and their Grounding in Perceptual Space and Time</p>	<p>Gerd-Bodo von Carlsburg <i>(Pädagogische Hochschule Heidelberg) / Karl-Hayo Siemsen</i> <i>(University of Applied Sciences, Emden):</i> Joachim Thieler: Machs Pädagogik in Briefen und Dokumenten</p>
15.30–16.10	<p>Stefan Hegemann <i>(Universitätsspital Zürich):</i> Ernst Mach und das Gleichgewicht</p>	<p>Igal Galili <i>(The Hebrew University of Jerusalem):</i> On the Influence of Ernst Mach on Contemporary Physics Curriculum at Schools: The Concept of Weight</p>
16.10–16.30	COFFEE BREAK	
16.30–17.10	<p>Klaus Robering <i>(University of Southern Denmark):</i> Ernst Mach's Geometry of Solids</p>	<p>Josef Pircher <i>(University of Vienna):</i> Ernst Mach's Didactics in Context</p>
17.10–17.50	<p>Milena Ivanova <i>(Ludwig-Maximilians University of Munich):</i> Mach, Duhem and the Limits of Scientific Knowledge</p>	<p>Clemens Ulrich <i>(Höhere Graphische Bundes-Lehr- und Versuchsanstalt, Wien):</i> Machs und Salchers Schlierenphotographien inspirieren ein Multimedia-Projekt an der 'Frankfurter'</p>

17.50–18.40

Robert M. Wald (*University of Chicago*): On Mach's Principle and General Relativity Theory

Manfred Laubichler (*Arizona State University*) / **Jürgen Renn** (*Max Planck Institute for the History of Science, Berlin*): Mach's Evolutionary Conception of Knowledge

Hayo Siemsen (*University of Applied Sciences, Emden*): The Psychology of Education from Beneke to Mach

CHAIR: **Wolfgang Reiter**

19.00–20.00

Gereon Wolters (*University of Konstanz*): Plenary Lecture: Mach and Relativity – A Never-ending Story?

Saturday, June 18

from 8.00

REGISTRATION: AULA, ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN, DR. IGNAZ SEIPEL-PLATZ 2, 1010 WIEN

SITZUNGSSAAL, ÖAW
DR. IGNAZ SEIPEL-PLATZ 2,
1010 WIEN

JOHANNESSAAL, ÖAW
DR. IGNAZ SEIPEL-PLATZ 2,
1010 WIEN

THEATERSAAL, ÖAW
SONNENFELSGASSE 19
1010 WIEN

CHAIR: **Michael Stöltzner**

CHAIR: **David Romand**

9.00–9.50

SYMPOSIUM: MACH, DUHEM
AND FRENCH PHILOSOPHY OF
SCIENCE

Anastasio Brenner (*Université Paul-Valéry, Montpellier*): Mach, Duhem and the Historical Method in Philosophy of Science

Eduardo Bermúdez Barrera (*Barranquilla*) / **René J. Campis, David Dahmen, Ronald Villa**, (*Universidad del Atlántico, Barranquilla*): Appraisal and Influence of Mach's Works in South America

9.50–10.30

Johannes-Geert Hagmann (*Deutsches Museum, Munich*): Light and Shadow: the Experimental Collaboration between Ernst and Ludwig Mach, Father and Son

Marco Buzzoni (*University of Macerata*): Mach and Duhem about Thought Experiments

Daniela Steila (*Università di Torino*): Mach's Reception in Pre-Revolutionary Russia

10.30–11.10

Eva-Maria Jung (*University of Münster*): Experiencing and Experimenting: Mach's Theory of Scientific Experiment in Context

Laurent Clauzade (*Université de Caen Comte*): Mach and Duhem on Scientific Explanation

11.10–11.30

COFFEE BREAK

11.30–12.10

Ana Alebić-Juretić (*University of Rijeka, Croatia*): Pater Salutaris –

Cristina Chimisso (*The Open University, UK*): Scientific Comments

Jean-Philippe Martinez (*University of Geneva, The "Mach*

University of Vienna, 1100, Vienna
The Mach's Corresponding
Collaborator

University of Vienna, 1100, Vienna
and the (Dis)continuity of History of
Science: Hélène Metzger as Reader
of Pierre Duhem

University of Vienna, 1100, Vienna
Argument" and its Use by Vladimir
Fock to Criticize Einstein in Soviet
Union

12.10 – 13.00

Karl Sigmund (*University of
Vienna*): Ernst Mach and Geometry

Erik C. Banks (*Wright State
University, Dayton, OH*): "The
Land of my Deepest Longing".
The American Reception of Ernst
Mach's Ideas

Martin Černohorský (*Masaryk
University, Brno*): The Principle of
Inertial Rotatory Motion in New-
ton's Lex I and Ernst Mach

13.00 – 14.00

LUNCH BREAK

CHAIR: **Michael Heidelberger**

CHAIR: **Guillaume Fréchette**

CHAIR: **Eva-Maria Jung**

14.00 – 14.50

Wolfgang Reiter (*Universität
Wien*): Mach, Boltzmann und die
Wiener Akademie der Wissen-
schaften

Richard Staley (*University of
Cambridge*): Revisiting Einstein's
Happiest Thought: From Physiology
of Perception to Experimental
Propositions and Principles in the
History of Relativity

Christoph Hoffmann (*University
of Lucerne*): Paris vs. Prague: On
Photographs and Epistemological
Prerequisites

14.50 – 15.30

Christian Bracco (*Université
de Nice Sophia-Antipolis*) /
Jean-Pierre Provost (*Université
de Nice Sophia-Antipolis*) [Influen-
ce de Mach, via Michele Besso, sur
les jeunes années d'Einstein]

Minwoo Seo (*University of Cam-
bridge*): Ernst Mach and the Rise of
Theoretical Physics

Stefano Salvia (*Università di Pisa*):
Ernst Mach's Historical Epistemo-
logy of Pre-Classical Mechanics

15.30 – 16.10

Alexandre Couture-Mingheras
(*Université de Liège*): L'empirisme
post-kantien de Mach: la conquête
d'un nouveau concept de «donné»

Marij van Strien (*University of
Wuppertal*): Determinism and
Indeterminism in the Philosophies
of Mach, Boltzmann and Poincaré

Regina Jonach (*University of
Vienna*): Ernst Mach und Kinemato-
graphie

16.10 – 16.30

COFFEE BREAK

16.30 – 17.20

Mihalis Dafermos (*Princeton
University*): Dynamics and Determi-
nism in General Relativity

Chantal Ferrer-Roca (*University
of Valencia*): Otto Blüh and Ernst
Mach's Legacy: Inheritance and
Task. Followed by a Performance *

CHAIR: Johannes Feichtinger

17.30 – 18.30

Manfred Laubichler (*Arizona
State University*) / **Jürgen Renn**
(*Max Planck Institute for the
History of Science, Berlin*): Plenary
Lecture: The Extended Evolution of
Knowledge

18.30

Friedrich Stadler (*University of
Vienna*): Closing Remarks

* Followed by the Performance of a Short Skit by Otto Blüh / Gefolgt von der Aufführung einer kurzen Parodie von Otto Blüh: Ernst Mach's 'Conversion' to Atomism – A Conversation Between Ernst Mach and Josef Popper-Lynkeus /

Ernst Machs ‚Bekehrung‘ zum Atomismus. Ein Gespräch zwischen Ernst Mach und Josef Popper-Lynkeus.
Presented by **RRemi Brandner** and **Wolfgang Nitsch**. The English translation will be provided by **Pamela Blüh**.
Scientific revision by **Chantal Ferrer-Roca**.

Sunday, June 19

9.00–21.00

SIDE PROGRAM CULTURAL TOUR TO BRÜNN/BRNO
(REGISTRATION REQUIRED)