

Hans Rademacher Collection

1942-1963

(0.5 linear feet)

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Table of contents

- [Background note](#)
- [Scope and content](#)
- [Administrative information](#)
 - [Restrictions on use](#)
 - [Preferred citation](#)
 - [Provenance](#)
 - [Processing information](#)
- [Additional descriptive information](#)
 - [Related material](#)
 - [Language\(s\) represented](#)
- [Added entries](#)
- [Contact information](#)
- [Detailed inventory](#)



- [Return to MOLE: APS Manuscripts On-Line](#)
- [Return to APS Library](#)
- [Return to APS home](#)

Abstract

Trained at Göttingen, the mathematician Hans Rademacher was expelled by the Nazis from his position at the University of Breslau in 1934 due to his pacifist beliefs. Settling at the University of Pennsylvania, Rademacher is best known for his contributions in number theory.

The Rademacher Collection consists of several manuscripts by Rademacher pertaining to modular forms and analytical number theory. Among these are an important unpublished work, *Über ein spezielles orthogonalsystem*, which had been believed lost until rediscovered by Emil Grosswald, the manuscript for a published article on Ramanujan identities under modular substitution, extensive notes for a lecture on Dedekind sums, and a book-length manuscript on analytical number theory.

Background note

The mathematician Hans Rademacher was born in Wandsbek, near Hamburg, Germany, on April 3, 1892. At the University of Göttingen, he studied with Constantin Carathéodory and E. G. H. Landau, and developed an early interest in the theory of real functions, completing a dissertation in

1916 on single-valued mappings and measurability.

After two years as a Privatdozent in Berlin, Rademacher moved to the University of Hamburg in 1922 as Ausserordentlicher Professor in mathematics, and although he enjoyed the intellectual environment there, he left three years later for Breslau, where he had been offered an ordinary professorship. By the time of his arrival there, his interests had begun to shift increasingly to number theory. After working on applications of Brun's sieve method and algebraic number fields, in 1928 he began work in the areas for which he became most widely known, modular forms and analytic number theory.

A pacifist and member of the International League for the Rights of Men and the Breslau chapter of the Deutsche Friedensgesellschaft, Rademacher earned the unwanted attention of the Nazi Party, and in 1934 he was removed from his position. Residing briefly in a small town on the Baltic, he accepted the offer of a visiting Rockefeller Fellowship and moved to the United States in 1934 to work at the University of Pennsylvania, his second wife Olga Frey and their new son following one year later. Although he was offered only an assistant professorship at Penn, Rademacher remained at the university until his retirement in 1962. His 1936 proof of the asymptotic formula for the growth of the partition function might have been his most widely known work, addressing questions raised by mathematicians from Leibniz to Euler, but he contributed to algebraic number fields and Dedekind sums. His book *The Enjoyment of Mathematics* (Princeton, 1957) demonstrated that he was equally adept at presenting mathematical concepts to a popular audience.

Even after his retirement, Rademacher continued to remain active in mathematics, lecturing at New York University for two years and serving on the faculty at Rockefeller University for five more. He died in Haverford, Pa., on February 7, 1969. His collected papers were edited by his friend Emil Grosswald and published by MIT Press in 1974.

Scope and content

The Rademacher Collection consists of several manuscripts by the mathematician Hans Rademacher pertaining to modular forms and analytical number theory. Among these are an important unpublished work, *Über ein spezielles orthogonalsystem*, which had been believed lost until rediscovered by Emil Grosswald, the manuscript for a published article on Ramanujan identities under modular substitution, extensive notes for a lecture on Dedekind sums, and a book-length manuscript on analytical number theory.

Administrative information

Restrictions on use

None.

Preferred citation

Cite as: Hans Rademacher Collection, American Philosophical Society.

Provenance

Gift of Emil Grosswald, 1980 (accn. no. 1980-1343ms) and Morris Newman, 1983.

Processing notes

Recatalogued by rsc, 2003.

Additional information

Related material

The Printed Materials Department contains a relatively complete selection or reprints of Rademacher's work (*Call no.*: 510.4 R11m).

Language(s) represented

English, German.

Added entries

Subjects

- American Philosophical Society
- Dedekind sums
- Functions, modular
- Mathematics
- Number theory
- Ramanujan Aiyangar, Srinivasa, 1887-1920

Contributors

- Rademacher, Hans, 1892-1969

Contact information

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Collection inventory

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|---|------|------|
| Rademacher, Hans , The Ramanujan identities under modular substitutions Published in <i>Transactions of the American Mathematical Society</i> 51 (1942), 609-636. | 1942 | AMsS |
| Rademacher, Hans , Dedekind sums #1 Notes for the Hedrick Lecture at the Mathematical Association of America Conference, Boulder, Colo., August 1963. Rademacher fell ill before the meeting and was replaced by Emil Grosswald. | 1963 | AMsS |
| Rademacher, Hans , Dedekind sums #2 | 1963 | AMsS |
| Rademacher, Hans , Dedekind sums #3 | 1963 | AMsS |
| Rademacher, Hans , Über ein spezielles orthogonalsystem Two drafts for a paper that was never published. | n.d. | AMsS |

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|--|------|------|
| Rademacher, Hans , Analytical Number Theory I (Chapters I-V) | n.d. | AMsS |
| Rademacher, Hans , Analytical Number Theory II (Chapters VI, VII) | n.d. | AMsS |
| Rademacher, Hans , Analytical Number Theory IIIa (Chapters VIII, IX) | n.d. | AMsS |
| Rademacher, Hans , Analytical Number Theory IIIb (Chapters X, XI) | n.d. | AMsS |
| Rademacher, Hans , Analytical Number Theory IV (Chapters XII, XV) | n.d. | AMsS |