

Introduction to ergodic theory

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Here are a few useful references - with absolutely no pretensions to completeness ...

Modern general texts:

I. P. Cornfeld, S. V. Fomin, and Ya. G. Sinai, *Ergodic Theory*, Springer-Verlag, New York, 1981.

P. Walters, *An Introduction to Ergodic Theory*, Springer-Verlag, New York, 1982.

K. Petersen, *Ergodic Theory*, Cambridge University Press, Cambridge, 1983.

R. Mañé, *Ergodic Theory and Differentiable Dynamics*, transl. S. Levy, Springer, Berlin etc. 1987.

Older, but particularly clear and elegant:

P. R. Halmos, *Lectures on Ergodic Theory*, Chelsea, New York, 1956.

Very well chosen “selected topics:”

Ya. G. Sinai, *Topics in Ergodic Theory*, Princeton University Press, 1994.

Recommended references for background information about measure theory and probability:

P. R. Halmos, *Measure Theory*, Van Nostrand, 1950, reprinted Springer, 1974.

L. Breiman, *Probability*, Addison-Wesley, 1968.

V. A. Rohlin (Rokhlin) “On the fundamental ideas of measure theory,” *Amer Math. Soc. Transl.* **71**, 1952, reprinted in¹ *Amer Math. Soc. Transl., Ser 1*, **10**, pp. 1–54 (year?). The Russian original appeared in *Mat. Sb.* **25**, 107-150, 1949.

¹The earliest American Mathematical Society translations were published as individually bound pamphlets. In 1955, translations began to appear instead collected into bound volumes, denoted as “AMS Translations, Series 2.” Then, beginning in about 1962, some or all of the original pamphlets were reprinted in a series of bound volumes denoted as “AMS Translations, Series 1.”