These results, developed by Donsker and Varadhan and to a lesser extent by Gartner, are treated very well in the book. A certain amount of hard analysis is required to handle the ergodicity requirements. These problems of suitable ergodicity conditions for the Markovian case as well as mixing conditions for the non-Markovian case take up the last chapters of the book.

The book contains an extensive list of references as well as detailed historical comments.

Those interested in connections with statistical mechanics should read references [2] or [3].

REFERENCES

[1] H. Cramer, *Sur un nouveau théorème-limite de la théorie des probabilités*, Actualités Sci. Indust. **736** (1938), 5–23. Colloque consacre a la theorie des probabilities, vol. 3, Hermann, Paris.

[2] R. S. Ellis, *Entropy, large deviations and statistical mechanics,* Springer-Verlag, Berlin, 1985.

[3] O. E. Lanford, *Entropy and equilibrium states in classical statistical mechanics,* Statistical Mechanics and Mathematical Problems (A. Lenard, ed.), Lecture Notes in Phys. vol. 20, Springer-Verlag, Berlin, 1973, pp. 1–113.

[4] M. Schilder, *Some asymptotics formulae for Wiener integrals,* Trans. Amer. Math. Soc. **125** (1966), 63–85.

S.R.S. VARADHAN
COURANT INSTITUTE OF MATHEMATICAL SCIENCES

BULLETIN (New Series) OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 24, Number 2, April 1991

0273-0979/91 $1.00 + $.25 per page

Stochastic calculus in manifolds, by Michel Emery. Springer-Verlag, Berlin, New York, 1989, 151 pp., $29.00. ISBN 3-540-51664-6

I am glad, but also a little embarrassed to present this book because Emery's work is very closely connected with Paul André Meyer's and mine, these two last ones being also much intertwined. A large part of the book is an exposition of previous work, but also much of the material is new. Anyway, the presentation is always original and interesting. I always prefer intrinsic formulations for manifolds "à la Bourbaki," giving the expression in coordinates