

9. J. H. C. Whitehead, *On simply connected 4-dimensional polyhedra*, *Comm. Math. Helv.* 22 (1949), 48–92.

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Probabilités et potentiel (Chapters XII–XVI), by Claude Dellacherie and Paul-André Meyer. Hermann, Paris, 1987, 374 pp. ISBN 2-7056-1417-6

In its current incarnation, *Probabilités et Potentiel* is a five-volume book, the last volume of which has not yet appeared. This fourth volume, subtitled “Théorie du potentiel associée à une résolvante. Théorie des processus de Markov,” brings *Probabilités et Potentiel* to an impressive 1,372 pages. Although appearing in “installments,” the text is very cohesive, laced with references to previous sections or chapters (and sometimes to future ones), and complemented with helpful remarks, “commentaries,” and examples. The authors are in complete control of their subject, and the result is masterful. Meyer and Dellacherie have built their careers at the interface between probability and potential theory, and are responsible not only for creating a good deal of new mathematics there, but also for energetically propagating the ideas and techniques among members of the probability community via the proceedings of the (Strasbourg) Séminaire de Probabilités, and through their books. This current project is a *tour de force*. We’ll start with a quick look at the project as a whole.

THE FAMILY HISTORY

This family of volumes has a history. Its *raison-d’être* is the existence of an intimate connection between probability theory and potential theory, whose discovery inspired a burst of mathematical activity during the 1950s and early 60s, with probability supplying new methods for potential theory and potential theory suggesting new directions for probability. Meyer set out to write a research monograph on potential theory, with the goal of exposing the new probabilistic techniques (especially martingale theory) to a wider audience of analysts. The book would also collect for probabilists