

that the beginning of the last paragraph on page 88 of his book is trivially false. He gives the necessary corrections in his not yet appeared article.)

This book ends with a chapter on parallel transports, moving frames, lifting, and developments with respect to a connection; it's also very rich in various results. Most of them are known (it's one of the first ideas of Malliavin about the transfer principle: parallel transport can be done along a smooth curve, therefore also along a semimartingale) but all are expounded following the ideas explained before: all the weapons have been now fully prepared for such an exposition.

I apologize for such a long analysis. I think the book deserves it, and I hope it will help people to read stochastic infinitesimal calculus without tears!

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The topology of 4-manifolds, by Robion C. Kirby. Springer-Verlag, Berlin, New York, 1989, 106 pp., \$13.50. ISBN 3-540-51148-2

In the years between roughly 1975 and 1985, the modern theory of four-dimensional manifolds was born as workers came to recognize that there was a fundamental difference between the topological theory of these manifolds and the corresponding smooth theory. One of the most striking aspects of this difference is that there are smooth manifolds homeomorphic to 4-dimensional euclidean space which are not diffeomorphic to it, a phenomenon which happens in no other dimension.

During the 1950s and 60s, great progress was made on basic existence and classification questions for manifolds in dimensions greater than 4. Thom's theory of transversality and Smale's theory of handlebodies were used to reduce many outstanding problems to a mixture of algebraic K -theory and homotopy theory. Throughout much of this period the results applied only to smooth or PL manifolds, but in 1969, Kirby and Siebenmann were able to prove that these transversality and handlebody techniques were also valid for topological manifolds.