with this equation, which, incidentally, belongs to a type that is invariant under all coordinate transformations and hence is meaningful in principle on any differentiable manifold with boundary.

One must mention, finally, that one defect of the book which causes difficulty in the reading, is that the translation was edited very carelessly, allowing often such grammatical mistakes as inappropriate interchange between definite and indefinite articles; the term "hypersurface" is used several times in the last section in the place of "hypersphere", and the internal references are frequently inaccurate; for example, the footnote on p. 13 "See editor's note on p. 6" should apparently refer to the one actually on p. 12; on p. 102 a reference to "subsection 4", in the reviewer's opinion, apparently intends to recall material appearing in p. 73–77, which are in §5, subsection 3. Another typical, more serious inconsistency is the sentence on p. 96, "This mapping is said to be *normal*.", which would be better understood if it were worded "This mapping is called the gradient mapping." However, if we take the pragmatic view that a careful editing of the translation might have taken such a long time that the publication might have lost some of its timeliness, we may be grateful for the fact we have access in an extremely short period to a monograph which brings us essentially up to date on a beautiful subject, in which current research is active and new results are appearing very rapidly.

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Accélération de la convergence en analyse numérique, by C. Brezinski, Lecture Notes in Math., vol. 584, Springer-Verlag, Berlin, Heidelberg, New York, 1977, 295 pp., $13.70.

The late George Forsythe once described the numerical analyst as "the guy who used to be the odd man in the mathematics department and now is the odd man in the computer science department". Indeed, a person working in numerical analysis frequently is at odds with someone. Either he produces rigorous and nontrivial mathematics–in which case it often turns out that his work is of no direct use to the man in the computing center who has to put a satellite in orbit–or he creates software which really solves problems, and solves them more efficiently and more accurately than the software produced by his colleague the physicist or engineer who also dabbles in computing, and then it turns out that his work is based on plausibility considerations and unprovable assumptions, and that in its attention to irksome detail and to numerical mishaps it resembles a sophisticated piece of technological design much more than it resembles a piece of mathematics. (An example of numerical analysis of the first kind would be Varga's *Functional analysis and approximation theory in numerical analysis*; an example of the second kind, Shampine and Gordon's *Computer solution of ordinary differential equations*.)

Brezinski's numerical analysis definitely is of the mathematical kind; however, it is analysis that can be of fairly direct use also in the computation