

(3) (see p. 425) Electromagnetic interactions are weaker than weak interactions. In the category of misleading proofs, one example will suffice: The proof on p. 88 that a representation has a dense subspace of differentiable vectors fails to use an approximate identity.

Despite the errors, Želobenko's book is a positive contribution because it assembles so much useful information. The researcher in Lie groups will want to own it. The teacher or student in Lie groups will want to own the excellent book by Varadarajan instead.

#### REFERENCES

1. J. F. Adams, *Lectures on Lie groups*, Benjamin, New York, 1969. MR **40** #5780.
2. C. Chevalley, *Theory of Lie groups*. I, Princeton Math. Ser., vol. 8, Princeton Univ. Press, Princeton, N.J., 1946. MR **7**, 412.
3. R. P. Feynman, *Structure of the proton*, Science **183** (1974), 601–610.
4. S. Helgason, *Differential geometry and symmetric spaces*, Pure and Appl. Math., vol. 12, Academic Press, New York, 1962. MR **26** #2986.
5. D. B. Lichtenberg, *Unitary symmetry and elementary particles*, Academic Press, New York and London, 1970. MR **42** #4104.

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*Analyse différentielle*, by Valentin Poenaru, Lecture Notes in Mathematics, vol. 371, Springer-Verlag, New York, 1974, 228 pp., \$7.70

*Stable mappings and their singularities*, by M. Golubitsky and V. Guillemin, Graduate Texts in Mathematics, vol. 14, Springer-Verlag, New York, 1973, x+209 pp., \$9.50

Two names dominate the early study of singularities of smooth ( $C^\infty$ ) maps: those of René Thom and Hassler Whitney. The contents of these books essentially consist of expositions of their works and of the outstanding, more recent work of John Mather dealing with smooth stability.

The two books appear in different series published by Springer-Verlag, Golubitsky and Guillemin ( $G^2$ ) in the series *Graduate texts in mathematics* and Poenaru (P) in the series *Lecture notes in mathematics*, and their styles reflect that fact.  $G^2$  have written a careful, clear textbook, often improving on the existing expositions, invariably putting a personal stamp on the material discussed and supplying the reader with useful exercises (particularly those in later chapters). Their aim is “to present to first and second year graduate students a beautiful and relatively accessible field of mathematics—the theory of singularities of stable differentiable mappings.” The value of P's book, on the other hand, is in his having gathered together material from a number of sources. His expositions remain quite close to those of his cited sources, but he has often included more detail. Gaps that appear in the frequently elliptical writing of research publications have been filled in. Some background material is outlined where needed but for the most part it seems to me