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Encyclopaedia of mathematical sciences, vol. 7, Several complex variables I (A. G. Vitushkin, ed.), Springer-Verlag, New York, Berlin, Heidelberg, 1990, 241 pp., $59.00. ISBN 0-387-17004-9

The present volume is the first of four devoted to the theory of functions of several complex variables by the Soviet encyclopaedia. This section of the encyclopaedia appears under the general editorship of A. G. Vitushkin; each of the four volumes consists of several articles written, with two exceptions by leading Soviet experts. The whole project is massive, totalling about a thousand printed pages, but for the most part the articles are not detailed expositions of their subject, being instead summary outlines of their subjects with rather full commentary but generally without proofs. These four volumes are convincing evidence of the great development seen by multidimensional function theory in the postwar era.

The first volume, the volume under review, is devoted to mainly analytic topics as opposed, say, to the theory of coherent sheaves or the relations of function theory with algebraic geometry. For these subjects, see subsequent volumes. In this volume, we find an introductory essay entitled "Remarkable Facts of Complex Analysis" by Vitushkin, which gives a brief overview of the contents of all four of the volumes. This is followed by articles by G. M. Khenkin on integral formulas in complex analysis, by E. M. Chirka on complex analytic sets, by Vitushkin on the geometry of hypersurfaces and by P. Dolbeault, on the theory of residues in several variables.

Vitushkin's introductory article is written in a style that is accessible to a broad variety of mathematicians. At the beginning