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BOOK REVIEWS—COMPTES RENDUS CRITIQUES

Géométrie Intégrale, by M. I. Stoka. 64 pages. Mémorial des Sciences Mathématiques, Gauthier-Villars, Paris, 1968. 29 F.

Integral geometry has its origin in the theory of geometrical probabilities known as the problems of M. W. Crofton, and it was developed by E. Cartan and W. Blaschke by introducing in it the group theoretical measures together with the notion of kinetic density in convex bodies. Ch. I of this book is devoted to the definition of measurable groups and presents the necessary and sufficient condition for two parametric groups that belong to a Lie group to have the same integral invariants. Kinetic density is defined by means of differential forms. Ch. II is the application of this material to points and lines on a plane and shows several classical theorems, e.g., the measure of a set of lines which intersect a convex curve is equal to its length. These elementary topics are enhanced in the remaining Chapters to Euclidean and Riemannian spaces and reveal the integral formulas obtained by L. A. Santálo for a two-dimensional Riemannian space of negative constant curvature.

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Differentiable Manifolds, by S. T. Hu. x+177 pages. Holt, New York, 1969. U.S. $12.65.

The object of this book is to provide a text of algebraic topology for a one-semester undergraduate course and it can be used before and after the author's Homology Theory published by Holden–Day, 1966, to provide a one-year course. The introduction is devoted to the definitions of the fundamental concepts of differentiable manifolds. After endowing a paracompact Hausdorff space with differentiable structure, tangent and cotangent frames are defined in order to construct the vector bundles over manifolds. In Ch. II the notions of differential forms and of exterior differentiation are introduced and by means of these the De Rham cohomology group is defined. It is shown that this group is invariant under the induced homomorphisms. Ch. III is a short sketch of Riemannian geometry beginning from inner product, metric and connection. Geodesics and normal coordinate neighbourhoods are used to define the convex neighbourhoods of Riemannian manifolds and this is done by the exponential map of each tangent space to the other. The final chapter is devoted to the proof as well as the formulation of De Rham theorem which is and must be the center of interest to the readers.