

There are a number of typographical errors in Shafarevich's book. In particular, many of the bibliographical references are misnumbered. There is one mathematical error: in the definition of a scheme (p. 244) one must consider *locally* ringed spaces, and require that all morphisms induce *local* homomorphisms of the stalks.

In conclusion, we can say that Dieudonné's history should be read by everyone interested in algebraic geometry, and that Shafarevich's book—at least until the publication of some other introductory algebraic geometry texts now in preparation—is a serious contender for “the best modern introduction to algebraic geometry”.

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BULLETIN OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 82, Number 3, May 1976

Foundations of special relativity: Kinematic axioms for Minkowski space-time, by J. W. Schutz, Lecture Notes in Mathematics, No. 361, Springer-Verlag, Berlin, Heidelberg, New York, 1973, xx+314 pp.

Since the latter part of the nineteenth century, the papers on the axiomatic foundations of Euclidean geometry and the closely related projective, affine, hyperbolic, and elliptic geometries are to be numbered in the thousands. The absence of a comparable flow of papers about the axiomatic foundations of special relativity is hard to understand, especially in view of the fact that Einstein's basic theoretical paper on special relativity appeared in 1905 [2], which is close to the heyday of foundational studies of Euclidean geometry.

During the early part of this century, almost the only person doing any work on the qualitative foundations of special relativity was Alfred A. Robb, who first began publishing on the subject in 1911, followed by a small book in 1913, a revision of that book in 1921, and a full-scale work in 1936 [5]. Robb's axiomatization of the geometry of special relativity is important for several reasons. First of all, he uses an extremely simple single primitive concept, the binary relation of one space-time event's being *after* another. This is a simpler primitive in logical structure than any of those that have been used for the foundations of Euclidean geometry, and for good reason. Tarski showed many years ago that no nontrivial binary relation can be defined in Euclidean geometry and consequently there is no hope of basing Euclidean axioms on a binary relation between points.

On the other hand, the complexity of Robb's axioms stands in marked contrast to the simplicity of the single primitive concept. If I cited the full set of axioms here, the reader would be appalled by their length and, in many cases, relative difficulty of intuitive comprehension.

Shortly after World War II, A. G. Walker in several publications [9], [10] offered a new qualitative foundation of the geometry of special relativity. In addition to the set of space-time events, he used particles, an ordering relation of beforeness on events, and, perhaps most importantly, a one-one