

matic probabilities when it requires a treatment of displacements that depend wholly or in part on chance. A problem of dynamic probabilities is one that has to do with movements of a system under forces that depend wholly or in part on chance.

In conclusion, let me say that the fact that the book gives practically no references makes it difficult to determine just what is due to the author and what is derived from earlier authority. However, much of this work on continuous probability is original with the author, and it appears to the reviewer that this first volume gives a systematic and unified presentation of the author's contributions to the development of a conception of probability that makes possible a distinct advance in this field of mathematics, and in our notions of the application of probability theory. It is further a fact of some interest that integral equations play a fundamental part in this treatment of probability.

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*Entwurf einer verallgemeinerten Relativitätstheorie und einer Theorie der Gravitation. I. Physikalischer Teil. Von A. EINSTEIN. II. Mathematischer Teil. Von M. GROSSMANN. Leipzig, B. G. Teubner, 1913. 38 pp.*

EINSTEIN no sooner had defined the principle of relativity and established it on a sound basis than he went about destroying it, as some would say, or generalizing it, as he says, so as to take account of gravitational phenomena. A fundamental point of view in the original theory of relativity is that mass and energy are proportional; the new theory says that mass and weight are also proportional, for example, a ray of light is attracted by matter. The uniform rectilinear velocity of light in "free space" is therefore abandoned, or to put it differently, the presence of matter anywhere renders all space no longer free. The mathematical part of the theory will be especially interesting to those familiar with quadratic differential forms and Ricci's absolute calculus.

The pamphlet contains the most recent and detailed presentation of revised relativity; it is merely a reprint with repagination of an article in the *Zeitschrift für Mathematik und Physik*, volume 62.

E. B. WILSON.