



## Sergei Alexander Schelkunoff

Sergei Alexander Schelkunoff was born in Russia in 1897. In the early years of his primary and secondary education he was interested in almost everything except mathematics which he would not have passed at all if it were not for the kindness of his teachers. At the age of 13, however, he came across Cauchy's *Algebraic Analysis*. In this book, Cauchy defined exponential and circular functions throughout the entire complex plane as solutions of appropriate functional equations, and thus obtained their essential properties. From then on Schelkunoff became an avid reader of the mathematical writings of the masters. He was profoundly impressed by Felix Klein's *Elementary Mathematics from the Higher Standpoint*. In Weber-Wellstein's mathematical trilogy, he was fascinated with the account of the realization of Lobachevskian and Riemannian geometries in Euclidean space, since one could hardly demonstrate more dramatically that these geometries stand or fall together with Euclidean geometry.

Most of his mathematical education was gained through such reading, for he had little formal training after he left high school. During his early college years he spent most of his time in defense plants. Then came military training as an officer, active military duty, and finally the chaos of revolution. It was not until late in September, 1921, when he landed in Seattle and went to Pullman, Wash. that this nomadic period in his life ended.

By the end of January, 1922, he had learned enough English to enter the State College of Washington, and in June, 1923, he received the BA and MA degrees in mathematics. Then he joined the

Engineering Department of the Western Electric Company and became engaged in *experimental* studies of electromechanical systems.

In 1926 he was invited to return to the State College of Washington. He did and taught mathematics until June, 1929. In the meantime he received the Ph.D. degree in mathematics from Columbia University.

Dr. Schelkunoff rejoined the Bell Telephone Laboratories (an outgrowth of the Engineering Department of the Western Electric Company), and became a member of the newly organized Mathematical Research Department. It was at this time that he began his work on electromagnetic theory and its applications. He wrote numerous articles in this field, and is the author of *Electromagnetic Theory*, *Applied Mathematics for Scientists and Engineers*, and *Advanced Antenna Theory*. He is also the co-author, with Harald T. Friis, of *Antennas—Theory and Practice*.

He is a member of Phi Kappa Phi, the American Mathematical Society, and the Mathematical Association of America; he is also a Fellow of the American Association for the Advancement of Science, the Institute of Radio Engineers, and the American Institute of Electrical Engineers. In 1942 he was awarded the Morris Liebmann Memorial Prize by the IRE for his contributions to the theory of radio wave propagation. In 1949 he received the Stewart Ballantine Medal for outstanding research in communications and reconnaissance from the Franklin Institute. At present, he is Assistant Director of Mathematical Research at the Bell Telephone Laboratories.