Mieczyslaw John Warmus

Graduated in mathematics at the University of Wroclaw in Poland in 1947 M.J.Warmus completed his PhD in mathematics at the same university in 1949. In 1958 he habilitated at the Mathematical Institute of the Polish Academy of Sciences in Warsaw, Poland, receiving the titles Doctor of Sciences and Associate Professor. In 1973 he was promoted to a Full Professor.

In Poland and in some other European countries habilitation means an oral examination on a thesis presented to qualify as assistent professor. Habilitation requires a prior PhD. The title of Associate Professor and the title of Full Professor are held for life, not depending on actual appointment. It follows that in those countries there exist: a title of Full (Associate) Professor and a position of full (associate) professor.

M.J.Warmus was employed:

1946-1947 at the University of Wroclaw, Poland, as a tutor,
1947-1949 -,,- -,,- -,,- -,,- as a lecturer,
1949-1951 -,,- -,,- -,,- -,,- as a senior lecturer,
1951-1958 at the Institute of Technology, Wroclaw,Poland, as an assistant professor,
1949-1951 at the Mathematical Institute of the Polish Academy of Sciences, Warsaw, Poland, as a senior lecturer,
1951-1958 -,,- -,,- -,,- -,,- -,,- -,,- -,,- as an assistant professor,
1958-1961 -,,- -,,- -,,- -,,- -,,- -,,- -,,- as an associate professor,
1958-1961 at the Institute of Nuclear Research, Warsaw, Poland, as an associate professor and head of the Department of Mathematical Methods,
1961-1968 organizer and president of the Computation Centre of the Polish Academy of Sciences, Warsaw, being an associate professor,
1968-1973 at the Institute of Computer Science (new name of the former Computation Centre) of the Polish Academy of Sciences, Warsaw, as an associate professor and head of the Department of Probabilistic Methods,
1973-1985 at the same institute as a full professor and head of the Department of Probabilistic Methods,
1966-1970 at the University of Warsaw as an associate professor and head of the Department of Mathematical Statistics,
1979-1984 at the Institute of Occupational Medicine, Lodz, Poland, as a full professor,
1985- at the University of Wollongong, Australia, as a Visiting Professor in the Department of Mathematics.

M.J.Warmus has been engaged in research work in mathematical statistics, linear algebra, theory of distributions, numerical and geometrical methods, interval mathematics and applications of mathematical methods in medicine, economy, agriculture, technology etc. He has been especially interested in mathematical modelling of biological and medical problems. He published over 120 papers and over a dozen monographs.

M.J.Warmus. GEOMETRY OF MATRICES.

The starting-point for the monograph was the observation that a geometrical illustration helps to understand many complicated analytical facts and, because matrices play an important role in various analytical methods, the knowledge of their geometry is almost indispensable. Most facts given in the monograph are well-known, nevertheless the approach to them is often original. Furthermore, these well-known facts, in general, are dispersed in the mathematical literature and a systematic collection of them seems to be very useful.

The geometry of matrices is based on multidimensional analytic geometry. Therefore the first part of the monograph gives an introduction to this geometry, with special regard to the geometry of hyperplanes. The theory of hyperplanes, which is proposed in the book, is very simple and seems to be original. The notion of collinearity and a new notion of a co-basis are fundamental here. The construction of such a theory was possible after identifying the notions of a vector and a point in a Cartesian space. Every matrix is then interpreted as a sequence of vectors (points).

The whole monograph will consist of 3 volumes:

Part I . Introduction to n-dimensional Analytic Geometry.
Part II. Linear Transformations.
Part III. Data-Matrices.

Part I is presented here.

Part II will consist of 3 chapters:
General Concepts.
Special Linear Transformations.
Simulation of Linear Transformations.
This part will have about 200 pages and be finished at the end of 1988.

Part III will include elements of Approximation Theory, Theory of Errors and miscellaneous methods transferred from mathematical statistics into algebraic language:
Correlation matrices.
Generalized theory of linear regression.
Factor analysis.
Discrimination analysis.
All these methods will be permanently interpreted geometrically. Part III will have also about 200 pages and it will be finished at the end of 1989.

Each part of the monograph can be treated as a separate monograph. Nevertheless all of them will use a standard notation and refer to foregoing parts of the monograph.

The author hopes that the proposed monograph will be an effective help to all users of matrix calculus, especially in numerical methods. Above all, mathematical statisticians will find here an everyday hand-book in their research and in practical problem solving. An elementary knowledge of the theory of matrices is sufficient to comprehend the whole monograph.

M.J.Warmus. A GENERALIZED THEORY OF OPERATIONAL CALCULUS.

The author proposes a generalization of his previous theory *) which enlarges the class of feasible functions, enables the obtaining of some unexpected new theorems, and simplifies proofs of some old ones. Moreover, some other theories of generalized functions may be embedded in this latest theory.

Both theories include the theory of the Laplace-Carson transformation and also, in the sense of an isomorphism, the theory of Mikusinski. The main advantages of the previous theory, namely:

1º the class of feasible functions $f(t)$ is larger than the class of functions transformable in the Laplace sense,

2º the class of feasible functions $g(p)$ is larger than the corresponding class of Mikusinski's operators,

3º there exists the possibility of calculating with functions of two variables $F(p,t)$ and thus introducing new techniques for solving differential equations,

4º complicated signs of transforms are replaced by the sign of equivalence $\equiv$,

are also the main advantages of the latest theory, which, however, as a more general one, gives the possibility of introducing more new techniques.

The monograph is destined for researchers interested in the developing of new techniques of Operational Calculus and in new applications of that calculus.

The knowledge of the previous theory of the same author is not needed to comprehend the monograph. An elementary knowledge of the theory of Laplace-Carson transformation is desirable but not necessary.

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*) M.Warmus. A new theory of Operational Calculus. Dissertationes Mathematicae LXXX. PWN, Warszawa 1971.