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PROFESSOR ROBERT A. MERTENS
in memoriam

(1921 – 2006)

Professor Robert A. Mertens a creator of the scientific school of acousto-optics in Belgium passed away at home in Antwerpen on 7-th May 2006, 9 days after his 85-th birthday anniversary.

He studied mathematics and theoretical physics at the University of Gent and graduated in 1943 (MSc), completed his PhD in 1949 and his DSc (Habilitation) in 1955. After several research positions at the Belgian Interuniversitary Institute of Nuclear Physics and the Belgian National Foundation he became Professor of Theoretical Mechanics at the Faculties of Sciences and Engineering of the University of Gent in 1963. He retired in 1986. He was a member of the Belgian Royal Academy of Sciences and the president of this Academy for 1992. He was

a member of European Acoustics Association, a fellow of the Acoustical Society of America and participated in other numerous international scientific organizations.

Professor Mertens' scientific interests focused on physical acoustics (theory of the interaction of the piano string and hammer, theoretical acousto-optics), transport theory and theoretical mechanics (nonlinear mechanics, adiabatic invariants, tops) and in the last few years on quantum mechanics (in relation to the Kapitza–Dirac effect and its analogy with acousto-optical interaction).

Particularly in acousto-optics R. Mertens has created a group of co-workers which together with him contributed with many theoretical papers introducing first (since 1946) approximate methods for the solution of Raman–Nath system of difference-differential equations which were consequently improved or generalized, new perturbation methods were derived and next (since 1967) exact solutions were found. Many problems related to the experimental progress in ultrasonic light diffraction phenomena were theoretically elaborated and further on (since 1984) analytical-numerical methods for acousto-optical interactions in different cases of the light and ultrasonics configurations were developed under R. Mertens' guidance. The Mertens' achievements were fundamental for further development of acousto-optics in Belgium (in Gent University and in the Catholic University of Leuven–Campus Kortrijk) recognized later as the "Flamish School of Acousto-optics" as well as for a progress in other centres in the world including Poland. Professor Mertens co-operated with Polish acousto-opticians since his attendance in the 1-st School on Acousto-optics and Applications (Wieżyca, 1980). He took part in the 2-nd School (Wieżyca, 1983) and later after his retirement he always sent his personal address-letter to the participants of the next every three years Schools on Acousto-optics and Applications organized by Gdańsk University.

Prof. Mertens was active until his last days. During the last few years he was interested in a very fundamental topics on matter waves and light interaction (Kapitza–Dirac effect) considering the analogy to ultrasonics and light interaction. The phenomena (like modulation effects for instance) manifest themselves in a manner typical for acousto-optical diffraction and the analogy may have the use of further comparisons between the matter waves-light and the light-ultrasonics interaction processes. In last September 2005 a common paper by R. Mertens and H. Batelaan on acousto-optical modulation of matter waves was presented (by prof. Batelaan) at the International Congress of SPIE in Warsaw on Optics and Optoelectronics at the Acousto-Optics and Photoacoustics session. Prof. Mertens was very happy in last March when he got reprint of this common paper together with some comments about the discussion which took place in Warsaw SPIE Congress after the presentation.

The group of R. Mertens' friends in Poland working in the field of acousto-optics (what has been the domain in science of his interest and a passion of his life) have been deeply upset of the loss of so outstanding scientist. For us he will long be remembered as the eminent person, tried friend and a wonderful men.

Prof. A. Śliwiński
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