Announcement

Selected Topics of Mathematical Physics

apl. Prof. Dr. Maxim A. Efremov

Description

This special lecture series aims at providing students with a Bachelor or Master degree with advanced mathematical tools to solve different problems faced by physicists, engineers, and applied mathematicians. They include (i) the Fourier method for partial differential equations (diffusion, wave, and etc.), (ii) method of integral transformations, (iii) the Green function and its applications, etc. Each method is illustrated by both well-known and completely new examples of physics problems appeared within classical and quantum approaches.

Content

- Partial differential equations
- Fourier method and special functions
- Method of integral transformation
- Green function and its applications
- Classical orthogonal polynomials

Literature

- P.M. Morse and H. Feshbach, Methods of Theoretical Physics (1953)
- A.N. Tikhonov and A.A. Samarskii, Equations of mathematical physics (2011)
- E. T. Whittaker and G. N. Watson, A Course of Modern Analysis (1948)

Additional Information

Lectures (3 hours/week)
Written exam
4 ECTS credits

Lecturer

apl. Prof. Dr. Maxim A. Efremov
Institut für Quantentechnologien, Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR)