FACOLTÀ DI SCIENZE MATEMATICHE, FISICHE E NATURALI
DIPARTIMENTO DI MATEMATICA E FISICA "NICCOLÒ TARTAGLIA"
INTERNATIONAL DOCTORAL PROGRAM IN SCIENCE

Wave processes in random media: physical principles, mathematical methods, and applications

Prof. Valentin FREILIKHER

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1. June 8th, h 11-14
Introduction. Disorder in nature. Disordered systems in quantum mechanics, optics, acoustics, and radiophysics.

2. June 9th, h 11-14
Concepts and definitions of electrodynamics and statistical description of wave fields.

3. June 12th, h 11-14
General mathematical formulation of the problem. Equations with random parameters.

4. June 14th, h 11-14
Integral equations. Green's function. Perturbation methods.

5. June 19th, h 11-14
Radiative transport equation and diffusion equation. Weak localization and backscattering enhancement. Multiple scattering. Feynman diagrams.

6. June 21st, h 11-14
One-dimensional disordered systems. Anderson localization.

7. June 22nd, h 11-13
Systems with random boundaries. Rough surface scattering.

Ph.D. Course

Giugno 2017
Aula 7
Università Cattolica del Sacro Cuore
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