

# Research Philippe Blanchard

Philippe Blanchard obtained his Ph.D. at the ETH-Zürich in mathematical physics. He has been a research fellow at CERN and has carried out teaching activities in Zürich (ETH), Tunis, Lausanne, Wuppertal and other cities. His main research interests lie in the use of functional analysis and probability theory (stochastic analysis, random graphs), in quantum and statistical physics (percolation theory, self-organized criticality), in epidemiology (disease spreading) and in sociology (learning as a social process, social contagion).

He has written more than 300 scientific papers and a number of books including “Mathematical and Physical Aspects of Stochastic Mechanics” (with Ph. Combe and W. Zheng, Springer, 1987), “Variational Methods in Mathematical Physics” (with E. Brüning, Springer 1992), “Mathematical Methods in Physics: Distributions, Hilbert Space Operators and Variational Methods” (with E. Brüning, Birkhäuser 2002), “Multiscale Methods in Quantum Mechanics” (with Gianfausto Dell’Antonio, Birkhäuser 2004), “Mathematical Analysis of Urban Spatial Networks (with D. Volchenkov, Springer Complexity, 2009), and “Markov Chains or the Game of Structure and Chance” (with J. Dawin and D. Volchenkov, EPJ-ST 184 (2010). He is editor of “Progress in Mathematical Physics”, “Mathematical Physics, Analysis and Geometry ” and “Fundamental Theories in Physics”.

He is a professor of mathematical physics at Bielefeld University, director of the Research Centre BiBoS (Bielefeld-Bonn Stochastics), Deputy Managing Director of the Center for Interdisciplinary Research (ZiF), honorary professor at the East China Normal University (Shanghai), scientific advisor of the Ecole Polytechnique Fédérale de Lausanne (EPFL), and member of the advisory board of the project “Interdisciplinary Mathematics for Smart Applications” of Tohoku University (Sendai).

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