



International prize

“Tullio Levi-Civita” for the Mathematical and Mechanical Sciences

We are pleased to announce that the *2025 Levi-Civita Prize for the Mathematical and Mechanical Sciences* will be presented to

Herbert Spohn

for the quality, the depth, the innovative character and international value of over 50 years of activity in Statistical Physics.

Herbert Spohn is currently retired and a Professor of Excellence at the Technical University of Munich (TUM). He studied Physics at University of Stuttgart, Oregon State University, and Ludwig-Maximilians University of Munich (LMU), from which he received his Ph.D. in 1975. He was postdoc at Yeshiva and Rutgers University in the group of Joel Lebowitz, at Princeton University in the group of Elliott Lieb, and at KU Leuven in the group of André Verbeure. After a DFG Heisenberg fellowship, 1980- 1982, he became Professor of Condensed Matter Physics at LMU. In 1998 he moved to TUM as Professor for Mathematical Physics. He received honorary doctorates from the Universities Paris-Dauphine and Paris-Diderot. The broader research field of Herbert Spohn is nonequilibrium statistical mechanics. He contributed to kinetic limits, in particular to the derivation of the Boltzmann equation for hard spheres and to the validity of the kinetic equation for weakly nonlinear wave equations with random initial conditions. In the Eighties he pioneered the hydrodynamic limit for stochastic many-particle systems, which is still a strong activity in probability theory. A somewhat different direction is the motion of interfaces. A highly influential result is the first derivation of motion by mean curvature from the stochastic Ginzburg-Landau equations. This research naturally opened the entry to the dynamics of growing surfaces, which on large scales are governed by the Kardar-Parisi-Zhang equation. He obtained the exact formula for the universal two-point scaling function. These early

contributions led to vast efforts and formed a novel mathematical area, now known as integrable probability. In the recent years, his focus is on the generalized hydrodynamics of integrable classical many-particle systems. He has written three books:

Large Scale Dynamics of Interacting Particles, 342 pages, Texts and Monographs in Physics, Springer Verlag, Heidelberg, 1991.

Dynamics of Charged Particles and Their Radiation Field, 360 pages, Cambridge University Press, 2004.

Hydrodynamic Scales of Integrable Many-Particle Systems, 240 pages, World Scientific, Singapore 2024.

His research work has been recognized by high distinctions, including

1993: Max-Planck Research Award jointly with J.L. Lebowitz

2011: Leonard Eisenbud Prize for Mathematics and Physics, American Mathematical Society

2011: Dannie Heineman Prize for Mathematical Physics, American Institute of Physics and American Physical Society

2011: Premio Caterina Tomassoni e Felice Pietro Chisesi Prize, Università di Roma "La Sapienza", Dipartimento di Fisica

2014: Georg-Cantor-Medaille, Deutsche Mathematiker-Vereinigung

2015: Henri-Poincaré-Prize sponsored by the Daniel Iagolnizer Foundation, International Association of Mathematical Physics

2017: Max-Planck Medal, German Physical Society

2019: Boltzmann Medal, IUPAP Commission C3 (Statistical Physics).