

Members of the Faculty, Ladies and Gentlemen, I am very happy to welcome you to the Pauli lectures of 2025. The lecture series is named after Wolfgang Pauli who was Professor of Physics at ETH Zurich from 1928 until his death in 1958. Pauli made great contributions to the development of Quantum Mechanics. He was awarded the Nobel Prize in 1945 for his famous Pauli Exclusion Principle.

By tradition, the Pauli lectures rotate among the disciplines of biology, physics, and mathematics. We are very fortunate this year to have Hugo Duminil-Copin as our speaker in Mathematics.

Hugo received his PhD in 2011 under the supervision of Stas Smirnov in Geneva where he started his study of phase transitions. What is a phase transition? Ice can melt, water can boil, or perhaps more subtly, a magnet can lose its magnetization at high temperatures (as famously discovered in the 1895 doctorate of Pierre Curie). Often a phase transition is a change from order to disorder and can be studied via a mathematical investigation of models of the phenomena. Duminil-Copin is a leader in the mathematical study. For his work in probability theory, especially related to phase transitions in dimensions 3 and 4, he received a Fields Medal in 2022.

Hugo is currently a Professor both in Geneva and at the IHES in France.

Of course, many of us have known Hugo for a long time since he was a student in Switzerland. So it is especially nice to welcome him here today to give the Pauli lectures. His first is titled "Can we truly understand by counting".

[RP, 15 October 2025]