UNIVERSITÀ DEGLI STUDI DI MILANO

Time: **Mar, 12th (Thursday), 2026**
16:30 (Rome, GMT+1)
Location: **Aula C02, Colombo**
Via Luigi Mangiagalli

Integrability and the decomposition of three-body interaction into pair-wise interactions

For a rather large class of integrable systems the dynamics can be described in terms of two-body interactions, such as scattering of particles or solitons. Furthermore, the interaction of three objects can be decomposed into (or built up from) a sequence of two-body interactions. In that situation the systems turns out to be integrable if and only if the final three-body result does not depend on which order the component two-body interactions take place. The canonical example is the collision of quantum particles on a line, leading to the Yang-Baxter equation. This has a natural extension to the set theoretical case, as exemplified by Yang-Baxter maps. But the same principle has still wider applications, and we will show how this paradigm can also be seen in the "Consistency-Around-a-Cube" concept for quad equations on a $\mathbb{Z}^2$ lattice, and in the three-soliton condition of Hirota's bilinear formalism.

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Prof. Jarmo Hietarinta is Professor Emeritus at the University of Turku. He is the author of more than 150 scientific papers and is one of the leading researchers in the field of discrete integrable systems and a member of the SIDE Steering Committee, which oversees the most important conference in the field.
Prof. Hietarinta received his Ph.D. in Physics in 1975 at the State University of Stony Brook. After holding several intermediate positions, he became Professor of Theoretical Physics at the University of Turku, where he also assumed the roles of Chairman of the Department of Physics and Dean of the Faculty of Mathematics and Natural Sciences.