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A Talk at the 2nd ISNMP Conference

Bad Ems, 28 June to 4 July 2026

Regular Session:

Speaker: Jarmo Hietarinta (University of Turku, Turku, Finland)

Title: *Integrability paradigm inspired by the Yang-Baxter equation*

Abstract: Consider three quantum particles (with different velocities) moving on a line. The order in which they collide depends on their initial positions, but if the Yang-Baxter equation is satisfied, the final result does not depend on the order. In this talk I will show that this basic idea can be observed in many different situations, if we use a creative interpretation of "particles" and "scattering". The canonical example leading to the Yang-Baxter equation has an immediate natural extension to the set theoretical case, as exemplified by Yang-Baxter maps. However, this paradigm can also be observed in the "Consistency-Around-a-Cube" concept for quad equations on a $\mathbb{Z}^2$ lattice, as well as in the three-soliton condition in Hirota's bilinear formalism.