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The ODE/IM correspondence. A look to the past and one to the future

Abstract

What came to be known with the name ODE/IM is a surprising and fascinating correspondence linking the theory of Ordinary Differential Equations to the theory of Quantum Integrable Systems. First discovered at the end of last century, it proved much more general than initially thought, having concrete ramifications in String Theory and AdS/CFT, SuperSymmetric gauge theories, condensed matter and even pure mathematics. In this talk I will review its workings, paying particular attention to its geometric aspects, and will indicate some of the currently open problems and future directions.