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Abstract for an Invited Paper
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Dannie Heineman Prize for Mathematical Physics Prize Lecture: Correlation Functions in Integrable Models: Ising Model and Monodromy Preserving Deformation
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Studies on integrable models in statistical mechanics and quantum field theory originated in the works of Bethe on the one-dimensional quantum spin chain and the work of Onsager on the two-dimensional Ising model. I will talk on the discovery in 1977 of the link between quantum field theory in the scaling limit of the two-dimensional Ising model and the theory of monodromy preserving linear ordinary differential equations. This work was the starting point of our journey with Michio Jimbo in integrable models, the journey which finally led us to the exact results on the correlation functions of quantum spin chains in 1992.