Bologna Workshop on:
CFT AND INTEGRABLE MODELS
and their applications from gauge/gravity dualities to statistical mechanics and quantum information

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Integrated correlators with line defects

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One of the most attractive features of supersymmetric gauge theories is a striking cross-fertilization of distinct exact techniques, like integrability, bootstrap, and supersymmetric localization. In recent years, certain integrated correlators emerged as a natural incarnation of that interplay, leading to a new tool to probe the non-perturbative regime of those models. In this talk, I will introduce protected integrated correlators in the context of 3d theories, even in the presence of line defects. Then, I will explain how to implement the constraints from supersymmetric localization to compute correlation functions of local operators, with and without line operators. As an application, I will focus on the ABJM theory and relate integrated correlators to physical observables, like the central charge or the bremsstrahlung. The latter is also accessible from integrability, providing an explicit bridge between these two methods. The talk is based on 2112.13816 and 2301.07035.

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