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

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Exact solvability of loop models

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In two-dimensional critical loop models, including the O(n) and Potts models, the spectrum is exactly known, as are a few structure constants or ratios thereof. In this talk, I will propose an exact formula for arbitrary four-point structure constants. The formula is a function of conformal dimensions, built from Barnes' double Gamma function, times a polynomial function of loop weights. Using numerical bootstrap methods, it is possible to determine this polynomial in examples, and to conjecture a bound on its degree. I will also conjecture that the polynomial can be determined in the corresponding lattice model, with a finite lattice size.

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