The AdS4 correspondence at low string energy: Y system formulation of the CP3 non-linear sigma model coupled to one fermion

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Starting from a recently proposed set of Asymptotic Bethe Ansatz equations governing the behavior of a particular integrable bidimensional non linear sigma model we derive a set of functional equations (Y system). After introducing the model and discussing its properties, we discuss the peculiar form of the Y system obtained and show how to use it to access UV physical quantities. The connection between our results and the Fendley conjecture is also analyzed to the extent of obtaining the NLSM as the limit of a family of perturbed conformal models.

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