

Bologna, 14 September 2016



SEZIONE DI BOLOGNA

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TO THE COORDINATOR OF THE PHD COURSE IN PHYSICS AND  
ASTROPHYSICS OF THE UNIVERSITY OF TURIN, prof. Mauro GALLIO

In the last four year, Massimo Mattelliano — whom I know personally — integrated himself very effectively in an internationally relevant research group, that on “integrability” in Turin. This PhD thesis is a simple proof for this fact: it is modern, well written and definitively inspiring for future research on both advanced field theory and condensed matter physics. It is up-to-date and original because it deals with a very modern technique to treat a well-known model, the Hubbard’s one: these consist in transforming an infinite number of (TBA) non-linear integral equations into and infinite set of functions equations (Y-system), and then eventually in a finite number of Riemann-Hilbert equations. In fact, this treatment has been inspired by (and, in the end, aims at) an analogue for maximally super-symmetric gauge theories. Besides, this thesis has been giving rise to a couple of original scientific publications on specialistic and renowned journals.

Of course, some language, typo and style improvements are possible and some of them are being sent (the candidate).

In conclusion, my judgement on this PhD work is manifestly positive.

Yours faithfully,

Davide Fioravanti  
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