



UvA-DARE (Digital Academic Repository)

Topological strings and quantum curves

Hollands, L.

Publication date
2009

[Link to publication](#)

Citation for published version (APA):

Hollands, L. (2009). *Topological strings and quantum curves*. Pallas Publications Amsterdam University Press.

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Topological Strings and Quantum Curves

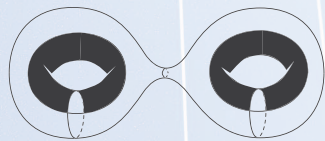
Topological Strings and Quantum Curves

UvA Dissertation

This thesis presents several new insights on the interface between mathematics and theoretical physics, with a central role for Riemann surfaces.

First of all, the duality between Vafa-Witten theory and WZW models is embedded in string theory. Secondly, this model is generalized to a web of dualities connecting topological string theory and $N=2$ supersymmetric gauge theories to a configuration of D-branes that intersect over a Riemann surface. This description yields a new perspective on topological string theory in terms of a KP integrable system based on a quantum curve. Thirdly, this thesis describes a geometric analysis of wall-crossing in $N=4$ string theory. And lastly, it offers a novel approach to construct metastable vacua in type IIB string theory.

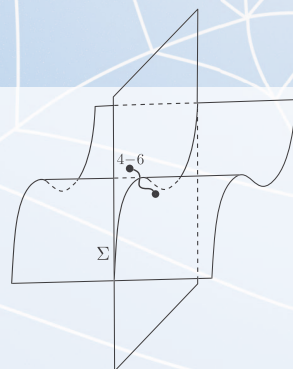
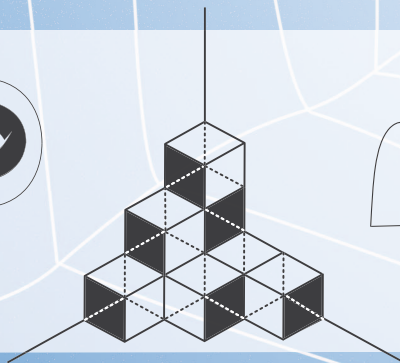
Lotte Hollands (1981) studied mathematics and theoretical physics at the University of Utrecht. In 2004 she started her PhD research at the Institute for Theoretical Physics of the University of Amsterdam, supervised by Prof. R.H. Dijkgraaf.



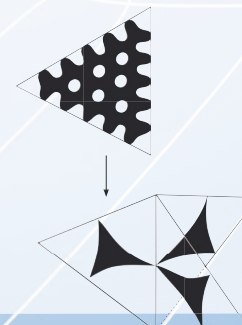
ISBN 978-90-8555-020-4



9 789085 550204



Lotte Hollands



PALLAS PUBLICATIONS



Lotte Hollands