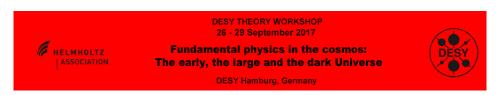
## Fundamental physics in the cosmos: The early, the large and the dark Universe



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## **Trigonometric Quantum Spectral Curve**

Wednesday 27 September 2017 16:25 (20 minutes)

I will report on the construction of the Quantum Spectral Curve (QSC) for the eta-deformation of the AdS\_5 x  $S^5$  superstring. The Quantum Spectral Curve is a very simple set of equations and boundary conditions that describe the spectrum of the deformed string theory. It can be regarded as a trigonometrisation of the QSC that formed the ultimate simplification of the spectral problem of the N=4 super Yang-Mills theory dual to superstring theory on AdS\_5 x  $S^5$  through the AdS/CFT correspondence: in contrast to other constructed QSC's, the eta-deformed QSC is real periodic, i.e. defined on a cylinder. This causes the derivation of this QSC to be very different from all previously known cases with regards to its analytic properties. I will discuss this derivation while highlighting the new features of this QSC. In particular, I will touch upon spectral theory for periodic functions and illustrate how one derives the boundary conditions for this QSC.

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