Constant scalar curvature metrics and semistable vector bundles

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In this talk, we present a construction of Kähler metrics with constant scalar curvature on the projectivisation of certain holomorphic vector bundles. When the vector bundle is slope-stable and the base admits a constant scalar curvature metric, it is a classical result of Hong that the total space of the projectivisation admits a constant scalar curvature metric in adiabatic classes. We extend their result to slope-semistable vector bundles: we show that if $E \to B$ is slope-semistable and the total space of the projectivisation is K-polystable then it admits a constant scalar curvature metric in adiabatic classes.

This is joint work with L.M. Sektnan.