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Variational and non-archimedean aspects of the correspondence for vector bundles

The famous correspondence for vector bundles, proved by Donaldson and Uhlenbeck-Yau states that the existence of Hermitian-Einstein metrics on a holomorphic vector bundle is equivalent to an algebro-geometric stability condition. Using a variational formulation, we will explain several results that provide a link between differential geometry and algebraic geometry in the above correspondence. Our approach is based on the study of an object called the Quot-scheme limit of Fubini-Study metrics, which is used to evaluate certain algebraic 1-parameter subgroups of Hermitian metrics by using the notion of Quot-schemes introduced by Grothendieck. We will present a dictionary between non-archimedean aspects related to the correspondence for bundles and non-archimedean aspects related to the Yau-Tian-Donaldson conjecture for varieties. This a joint work with Y. Hashimoto (Osaka).