

Estimated transversality and rational maps

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In his work on symplectic Lefschetz pencils, Donaldson introduced the notion of estimated transversality for a sequence of sections of a bundle. Together with asymptotic holomorphicity, it is the key ingredient allowing the construction of symplectic submanifolds. Despite its importance in the area, estimated transversality has remained a mysterious property. The aim of this talk is to shed some light into this notion by studying it in the simplest possible case namely that of S^2 . We state some new results about high degree rational maps on the 2-sphere that can be seen as consequences of Donaldson's existence theorem for pencils, and explain how one might go about answering a question of Donaldson: what is the best estimate for transversality that can be obtained? We also show how the methods applied to S^2 can be further generalized.