

Seminar on Complex Analysis  
Meeting 2042, 13th June 2011  
lecture: **Extremal Kähler metrics**  
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Extremal Kähler metrics were introduced by Calabi as candidates for canonical metrics in a fixed Kähler class. The existence of extremal metrics is intimately related to algebro-geometric properties of the underlying complex manifold. I will explain the Yau-Tian-Donaldson conjecture, which makes this relationship precise and I will then provide some examples of existence and non-existence results, to illustrate the types of phenomena that can occur.