

Second order scalar elliptic pde:s, Dirac operators and a generalization of the Beltrami equation

Abstract

In the plane there is a fruitful interplay between the theory of second and first order elliptic partial differential equations and the theory quasiconformal mappings via the Beltrami equation. In this talk we will consider a generalization of the Beltrami equation to higher dimension involving Dirac operators which is naturally associated to second order elliptic equations on divergence form. I will explain which parts of the complex theory that admit a natural extension to higher dimensions and which parts that do not.