

Pluripotential theory and application to semigroups

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Green’s function and Poisson kernel are the basic tools for analysis in the unit disc of \mathbb{C} , in particular to obtain reproducing formulas of subharmonic functions and, which is less known, to study dynamics of holomorphic self-maps and holomorphic semigroups of the unit disc. In this talk we will explain how, a recently discovered solution to a particular Monge-Ampere equation in several complex variables can be interpreted to as a Poisson kernel in convex domains. We will briefly show how to use it and Demailly’s formula in order to obtain explicit reproducing formula for pluriharmonic functions. Moreover, we will discuss how to use the pluricomplex Green function and Poisson kernel to study dynamics of semigroups, characterize semicomplete holomorphic vector fields and possible applications to Loewner chains.