

COMPARISON OF HARMONIC KERNELS ASSOCIATED WITH A CLASS
OF SEMILINEAR ELLIPTIC EQUATIONS

Mahmoud Ben Fredj
Khalifa El Mabrouk

Abstract: Let D be a smooth domain in \mathbb{R}^N , $N \geq 3$, and let f be a positive continuous function on ∂D . Under some assumptions on φ , it is shown that the problem $\Delta u = 2\varphi(u)$ in D and $u = f$ on ∂D admits a unique solution which will be denoted by $H_D^\varphi f$. Given two functions φ and ψ , our main goal in this paper is to investigate the existence of a constant $c > 0$ such that

$$\frac{1}{c}H_D^\varphi f \leq H_D^\psi f \leq cH_D^\varphi f.$$

2000 AMS Mathematics Subject Classification: Primary: 60J45, 60H30; Secondary: 60J35, 35J25.

Keywords and phrases: Brownian motion, Green operator, Dirichlet problem, harmonic kernel, semilinear problem.

THE FULL TEXT IS AVAILABLE [HERE](#)