

$$S_t \circ c(h)(a_s)_{ti} c(s) + \mathfrak{S}_e m^i n(a_r)$$

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Harnack inequality for a class of integro-differential operators

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Time and Place: Monday September 18, 2006; 12:55–1:45 p.m.; LCB 225

We will consider a class of second order elliptic differential operators. Under the assumption that the local part of the operator is uniformly elliptic and under suitable conditions on the jump kernel, we establish a Harnack inequality for non-negative harmonic functions. We also show that the Harnack inequality will fail without suitable conditions on the jump kernel. A regularity theorem for those non-negative harmonic functions is also proved.