1057-35-131 **Michael W. Frazier*** (frazier@math.utk.edu), Mathematics Department - 104 Aconda Court, 1534 Cumberland Ave, University of Tennessee, Knoxville, TN 37996-0614, and **Fedor Nazarov** and **Igor E. Verbitsky**. *Global Estimates for Kernels of Neumann Series, Green's Functions, and the Conditional Gauge.* Preliminary report.

We consider estimates for kernels of resolvent series $(I-T)^{-1} = \sum_{j=0}^{\infty} T^j$, for integral operators of the form $Tf(x) = \int_\Omega K(x,y)f(y)\,d\omega(y)$, where (Ω,ω) is a σ-finite measure space, $K : \Omega \times \Omega \to (0,\infty]$ is symmetric and measurable, $1/K$ satisfies a quasi-metric condition, and $\|T\|_{L^2(\omega)\to L^2(\omega)} < 1$. Let K_j denote the kernel of T^j. Then there exists $c > 0$ depending only on the quasi-metric constant κ and $C > 0$ depending only on κ and $\|T\|$ such that

$$K(x,y)e^{cK_2(x,y)/K(x,y)} \le \sum_{j=1}^{\infty} K_j(x,y) \le K(x,y)e^{CK_2(x,y)/K(x,y)}.$$

We apply this result to obtain estimates for Green's functions associated with fractional Schrödinger operators $(-\triangle)^{\alpha/2} - q$, for $q \ge 0$ and $0 < \alpha \le 2$, on a domain Ω which could be all of $\mathbb{R}^n$ or a bounded domain in $\mathbb{R}^n$ which satisfies the boundary Harnack principle. These estimates are equivalent to estimates for the conditional gauge for α-stable processes. (Received January 18, 2010)