1067-60-2283   **Sarah N Bryant*** (`bryants@dickinson.edu`), Dickinson College, Dept. of Mathematics and Computer Science, Carlisle, PA 17013. *Counting and Partition Function Asymptotics for Subordinate Killed Brownian Motion.*

Given d-dimensional Brownian motion B, if we first kill B in a domain D and then subordinate by a one-dimensional increasing Levy process T (the subordinator with Laplace exponent φ), the resulting process is subordinate killed Brownian motion. This process has associated spectrum $\{\mu_j\}_{j\geq 1}$ and transition density $p_D^\varphi(t,x,y)$. We consider the counting function $N_D^\varphi(\lambda) = \#\{j : \mu_j \leq \lambda\}$ and partition function $Z_D^\varphi(t) = \int_D p_D^\varphi(t,x,x)dx$. In this talk, we prove first- and second-order asymptotics of the counting function for subordinate killed Brownian motion on certain domains. By using the Karamata Tauberian theorem we then give first-order asymptotics of the associated partition function for various subordinators. We include second-order asymptotics of the partition function for a specific set of subordinators, namely the $\frac{\alpha}{2}$-stable subordinators. (Received September 22, 2010)