1023-60-708 **Richard F. Bass** and **Alexander Lavrentiev*** (alexander.lavrentiev@uwc.edu), 1478 Midway Road, Menasha, WI 54952-1297. *The submartingale problem for a class of degenerate elliptic operators.*

We consider the degenerate elliptic operator acting on C_b^2 functions on $[0,\infty)^d$:

$$\mathcal{L}f(x) = \sum_{i=1}^{d} a_i(x) x_i^{\alpha_i} \frac{\partial^2 f}{\partial x_i^2}(x) + \sum_{i=1}^{d} b_i(x) \frac{\partial f}{\partial x_i}(x),$$

where the a_i are continuous functions that are bounded above and below by positive constants, the b_i are bounded and measurable, and the $\alpha_i \in (0,1)$. We impose Neumann boundary conditions on the boundary of $[0,\infty)^d$. There will not be uniqueness for the submartingale problem corresponding to $\mathcal{L}$. If we consider, however, only those solutions to the submartingale problem for which the process spends 0 time on the boundary, then existence and uniqueness for the submartingale problem for $\mathcal{L}$ holds within this class. Our result is equivalent to establishing weak uniqueness for the system of stochastic differential equations

$$dX_t^i = \sqrt{2a_i(X_t)}(X_t^i)^{\alpha_i/2} dW_t^i + b_i(X_t)\,dt + dL_t^{X^i}, \qquad X_t^i \geq 0,$$

where W_t^i are independent Brownian motions and $L_t^{X_i}$ is a local time at 0 for X^i. (Received September 20, 2006)