1084-34-158 **Roger Nichols*** (`roger-nichols@utc.edu`). *Positivity Preserving of Semigroups and Resolvents of Sturm–Liouville-type Operators with Distributional Coefficients.* Preliminary report.

In this talk, we consider self-adjoint extensions of the minimal operator associated with Sturm–Liouville-type differential expressions,

$$\tau f = \frac{1}{r}\Big(- \big(p[f' + sf]\big)' + sp[f' + sf] + qf\Big) \text{ on } (a,b) \subset \mathbb{R},$$

where the coefficients p, q, r, s are real-valued and Lebesgue measurable on (a,b), with $p \neq 0$, $r > 0$ a.e. on (a,b), and p^{-1}, q, r, $s \in L^1_{\text{loc}}((a,b);dx)$, and f belongs to a suitably wide class of functions. In the case where τ is regular on (a,b) (i.e., when (a,b) is a finite interval and $L^1_{\text{loc}}((a,b);dx)$ above may be replaced by $L^1((a,b);dx)$), all self-adjoint extensions of the minimal operator are characterized by boundary conditions at a and b. Using integral operator techniques and the Beurling–Deny criterion, under the assumption $p > 0$ a.e. on (a,b), we classify all boundary conditions leading to self-adjoint extensions which generate a positivity preserving semigroup (equivalently, resolvent).

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