

1092-34-233

**Xueyan Liu\*** (xueyan-liu@utc.edu), Mathematics Department/Dept 6956, University of Tennessee at Chattanooga, Chattanooga, TN 37403. *Nonlocal Boundary Value Problems with Even Gaps in Boundary Conditions for Third Order Differential Equations.*

We use solution matching to study the uniqueness and existence of solutions for the nonlocal boundary value problem for the third order differential equation,  $y'''(x) = f(x, y(x))$ , on an interval  $[a, c]$  satisfying  $y(a) - \int_a^b y(x)d\alpha(x) = y_1$ ,  $y'(b) = y_2$ ,  $\int_b^c y(x)d\beta(x) - y(c) = y_3$ , where  $\int_a^b y(x)d\alpha(x)$  and  $\int_b^c y(x)d\beta(x)$  are Riemann-Stieltjes integrals with positive measures  $d\alpha(x)$  and  $d\beta(x)$ , respectively. We match solutions on  $[a, b]$  with solutions on  $[b, c]$ . Monotonicity conditions and some growth conditions on  $f$  are imposed. (Received August 10, 2013)