1067-34-940 **John R. Graef*** (john-graef@utc.edu), Department of Mathematics, The University of Tennessee at Chattanooga, Chattanooga, TN 37403, and **Lingju Kong** (lingju-kong@utc.edu) and **Qingkai Kong** (kong@math.niu.edu). *Uniqueness and parameter dependence of positive solutions for systems of fractional boundary value problems.*

Consider the fractional boundary value problem

$$-D_{0^+}^{\nu}\boldsymbol{u}(t) = \Lambda f(t,\boldsymbol{u}),\ t \in (0,1),$$

$$\boldsymbol{u}^{(j)}(0) = 0,\ j = 0,\dots,n-2, \quad [D_{0^+}^{\alpha}\boldsymbol{u}(t)]_{t=1} = 0,$$

where $m \geq 1$ and $n \geq 3$ are integers, $n-1 < \nu \leq n$, $1 \leq \alpha \leq n-2$, $\boldsymbol{u}(t) = (u_1(t),\dots,u_m(t))^T$, $f(\boldsymbol{u}) = (f_1(\boldsymbol{u}),\dots,f_m(\boldsymbol{u}))^T$, $\Lambda = \text{diag}\,[\lambda_1,\dots,\lambda_m]$, and D_{0+}^{β} is the Riemann-Liouville fractional derivative of order β. Criteria for the existence and uniqueness of positive solutions are obtained and the dependence of positive solutions on Λ is discussed. Some recent results from mixed monotone operator theory are used in the proofs. (Received September 16, 2010)