1154-35-511 **Yan Li*** (yan_li1@baylor.edu), Sid Richardson Science Building, One Bear Place 97328, Waco, TX 76798, and **Ran Zhuo** (zhuoran1986@126.com), Huanghuai University, Zhumadian, Henan 463000, Peoples Rep of China. *Existence of positive solutions to nonlinear equations involving distinct fractional Laplacians.* Preliminary report.

Consider

$$\begin{cases} (-\triangle)^{\alpha/2}u(x) = f(x,u(x),v(x)), & x \in \Omega, \\ (-\triangle)^{\beta/2}v(x) = g(x,u(x),v(x)), & x \in \Omega, \\ u(x) = v(x) = 0, & x \in R^n \backslash \Omega, \end{cases} \tag{1}$$

where f, $g \in C(\Omega, R, R)$, Ω is bounded in R^n and $\partial\Omega$ is C^2. When the solution (u,v) is a priori bounded, under some assumptions on $f(x,t,s)$ and $g(x,t,s)$ about their super-linearity with respect to t and s near zero and infinity, we prove that there exists at least one positive solution (u,v) using the topological degree theory. (Received September 05, 2019)