1099-42-276 **Michael W Frazier*** (frazier@math.utk.edu), 227 Ayres Hall, 1403 Circle Drive, Knoxville, TN 379961320, and **Svetlana Roudenko**. *Traces of Weighted Sobolev and Potential Spaces.* Preliminary report.

Let u be an A_p weight on $\mathbb{R}^{n+1}$ and v a doubling weight on $\mathbb{R}^n$. Define the trace operator $Trf(x') = f(x', 0)$, where $x' \in \mathbb{R}^n$ and f is a function on $\mathbb{R}^{n+1}$. If $\alpha > \frac{1}{p} + n\left(\frac{1}{p} - 1\right)_+ + \frac{\beta - n}{p}$, where β is the doubling exponent of v, then the trace operator is bounded from the weighted Bessel potential space $W^{\alpha,p}(u)$ (which coincides with the weighted Sobolev space $W^{k,p}(u)$ if $\alpha = k \in \mathbb{N}$) into the weighted Besov space $B_p^{\alpha-1/p,\,p}(v)$ if and only if there exists $C > 0$ such that

$$\frac{1}{|I|}\int_I v\,dx' \le C\frac{1}{|Q(I)|}\int_{Q(I)} v(x)\,dx$$

for all dyadic cubes $I \subseteq \mathbb{R}^n$ with side length $\ell(I) \le 1$, where $Q(I) = I \times [0, \ell(I)]$. If u and v satisfy the converse inequality, then there exists a continuous linear map $Ext : B_p^{\alpha-1/p,\,p}(v) \to W^{\alpha,p}(u)$. If both inequalities hold, $Tr \circ Ext$ is the identity on $B_p^{\alpha-1/p,\,p}(u)$. More generally, the results hold with $W^{\alpha,p}(u)$ replaced by the Triebel-Lizorkin space $F_p^{\alpha,\,q}(u)$ for any $0 < q \le \infty$. (Received February 10, 2014)