UDC 517.54:517.813.52

MATEMATICHESKIE TRUDY
2007, V. 10, N 2, 19–61

# THE TRACES OF BESSEL POTENTIALS ON REGULAR SUBSETS OF CARNOT GROUPS

*S. K. Vodop'yanov and I. M. Pupyshev*

We prove the direct theorem on the traces of the Bessel potentials $L_p^\alpha$ defined on a Carnot group, on the regular closed subsets called Ahlfors $d$-sets. The result is convertible for integer $\alpha$, i.e., for the Sobolev spaces $W_p^\alpha$ (the converse trace theorem was proven in [1]). This theorem generalizes A. Johnsson and H. Wallin's results [2] for Sobolev functions and Bessel potentials on the Euclidean space.

*Key words and phrases*: Sobolev space, Bessel potentials, Carnot group, embedding theorem, trace of a function.

*Vodop'yanov Sergej Konstantinovich*
Sobolev Institute of Mathematics,
Novosibirsk, 630090 Russia.
E-mail: vodopis@math.nsc.ru

Received
February 14, 2007

*Pupyshev Il'ya Mikhajlovich*
Novosibirsk State Technical University,
Novosibirsk, 630092 Russia.
E-mail: iluxa1@ngs.ru

Translated into English:
*Siberian Advances in Mathematics*, V. 18, N 1, 44–75 (2008).

---

1. *Vodop'yanov S. K. and Pupyshev I. M.* (2007) Traces of Sobolev functions on the Ahlfors sets of Carnot groups, *Sibirsk. Mat. Zh.* v. 48, N 6, 1201–1221 (Translated from Russian: (2007), *Siberian Math. J.* v. 48, N 6, 961–978.)

2. *Johnsson A. and Wallin H.* (1984), Function spaces on subsets of $\mathbb{R}^n$, *Math. Rep. Ser. 2.* v. 1, 1–121.

---