UDC 517.518.23+517.954

MATEMATICHESKIE TRUDY
2008, V. 11, N 1, 113–131

SOBOLEV-TYPE INTEGRAL REPRESENTATIONS FOR FUNCTIONS DEFINED ON CARNOT GROUPS

E. A. Plotnikova

We obtain some integral representations of the form $f(x) = P(f) + K(\nabla f)$ on the Carnot groups, where $P(f)$ is a polynomial and K is an integral operator with a specific singularity. These representations are employed to prove the weak Poincaré inequality.

Key words and phrases: Carnot group, integral representation, Poincaré inequality

Plotnikova Elena Aleksandrovna
Novosibirsk State University,
Novosibirsk, 630090 Russia.
E-mail: pselena@gmail.com

Received
April 19, 2007

Translated into English:
Siberian Advances in Mathematics, V. 18, N 4, 275–287 (2008).