

Fractional Orlicz-Sobolev spaces

Andrea Cianchi

Università di Firenze

`andrea.cianchi@unifi.it`

Angela Alberico

Istituto per le Applicazioni del Calcolo "M.Picone", Napoli

`a.alberico@iac.cnr.it`

Lubos Pick

Charles University, Prague

`pick@karlin.mff.cuni.cz`

Lenka Slavíková

Charles University, Prague

`slavikova@karlin.mff.cuni.cz`

Optimal embeddings for fractional-order Orlicz–Sobolev spaces are presented. Related Hardy type inequalities are proposed as well. Versions for fractional Orlicz-Sobolev seminorms of the Bourgain-Brezis-Mironescu theorem on the limit as the order of smoothness tends to 1 and of the Maz'ya-Shaposhnikova theorem on the limit as the order of smoothness tends to 0 are established.