## Nonlocal *p*-Laplacian problem and Carrier's double phase problem

## Leszek Gasiński<sup>1</sup>

<sup>1</sup> Department of Mathematics, University of the National Education Commission, ul. Podchorążych 2, 30-084 Kraków, Poland

leszek.gasinski@uken.krakow.pl

**Abstract:** We obtain nonexistence, existence and multiplicity results for a nonlocal *p*-Laplacian as well as for a nonhomogeneous operator with unbalanced growth problem. To tackle these challenges, we employ a combination of analytical techniques, including the sub-super solution method, variational and truncation approaches, and set-valued analysis. Furthermore, we examine a one-dimensional fixed-point problem.