

NOTES ON THE QUALITY OF NON-COMPACTNESS FOR NON-COMPACT SOBOLEV EMBEDDINGS

Jan Lang

(Department of Mathematics, 100 Math Tower, 231 West 18th Ave., Columbus, OH 43210-1174, USA)

E-mail: lang@math.osu.edu

It is well known that when a Sobolev space on a bounded domain is embedded into the smallest possible Lebesgue or Lorentz space, the resulting embedding is non-compact. In this talk, we will closely examine non-compact Sobolev embeddings and describe the quality of their non-compactness from different points of view.

REFERENCES

- [1] Lang, Jan; Mihula, Zdeněk Different degrees of non-compactness for optimal Sobolev embeddings. *J. Funct. Anal.* 284 (2023), no. 10, Paper No. 109880, 22 pp.
- [2] Edmunds, D. E.; Lang, J. Non-compact embeddings of Sobolev spaces. *J. Approx. Theory* 286 (2023), Paper No. 105848, 6 pp.
- [3] Lang, Jan; Mihula, Zdeněk; Pick, Luboš Compactness of Sobolev embeddings and decay of norms. *Studia Math.* 265 (2022), no. 1, 1–35.
- [4] Lang, Jan; Musil, Vít; Olšák, Miroslav; Pick, Luboš Maximal non-compactness of Sobolev embeddings. *J. Geom. Anal.* 31 (2021), no. 9, 9406–9431.
- [5] Edmunds, David E.; Lang, Jan; Mihula, Zdeněk Measure of noncompactness of Sobolev embeddings on strip-like domains. *J. Approx. Theory* 269 (2021), Paper No. 105608, 13 pp.
- [6] Lang, Jan; Musil, Vít Strict s -numbers of non-compact Sobolev embeddings into continuous functions. *Constr. Approx.* 50 (2019), no. 2, 271–291.