

# On sharp constants in fractional Sobolev and Hardy inequalities

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We discuss the relations between two types of fractional Laplacians – “Dirichlet” and “Navier” ones – in bounded domains in  $\mathbb{R}^n$ . Then we prove the coincidence of the Sobolev and Hardy constants relative to these operators of any real order  $m \in (0, \frac{n}{2})$ .

This talk is based on joint papers with Roberta Musina, see [1], [2], [3].

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## References

- [1] R. Musina, A. I. Nazarov, “On fractional Laplacians”, *Comm. in PDEs*, **39**:9 (2014), 1780–1790.
- [2] R. Musina, A. I. Nazarov, *On fractional Laplacians*–2, 2014, arXiv: 1408.3568.
- [3] R. Musina, A. I. Nazarov, “On the Sobolev and Hardy constants for the fractional Navier Laplacian”, *Nonlinear Analysis*, 2014.