

My results in the paper:

- Inequality (8) proved in: [1]
- Theorem 1: Proved by me (Almost same proof as theorem 1 in [8]).
- Corollary 1: Proved by me. Proof uses [2, Prop 4.1].
- Theorem 2: Proved by me. Proof uses ([6] ,[10], [4, Th. 4.6])
- Inequality (33): Proved by me.
- Section 4: Numerical example done by me.

- **References**

[1] Owe Axelsson. Iterative Solution Methods. Cambridge University Press, 1994.

[4] Haim Brézis. Functional analysis, Sobolev spaces and partial differential equations, volume 2. Springer, 2011.

[6] David E Edmunds and Hans Triebel. Entropy numbers and approximation numbers in function spaces. Proceedings of the London Mathematical Society, 3(1):137–152, 1989.

[8] Janos Karatson. Mesh independent superlinear convergence estimates of the conjugate gradient method for some equivalent self-adjoint operators. Applications of Mathematics, 50(3):277–290, 2005.

[10] Jan Vybíral. Widths of embeddings in function spaces. Journal of Complexity, 24(4):545–570, 2008.