



**Universität Stuttgart**  
Department of Mathematics

## **Project 2: Time dependent heat equation with a source**

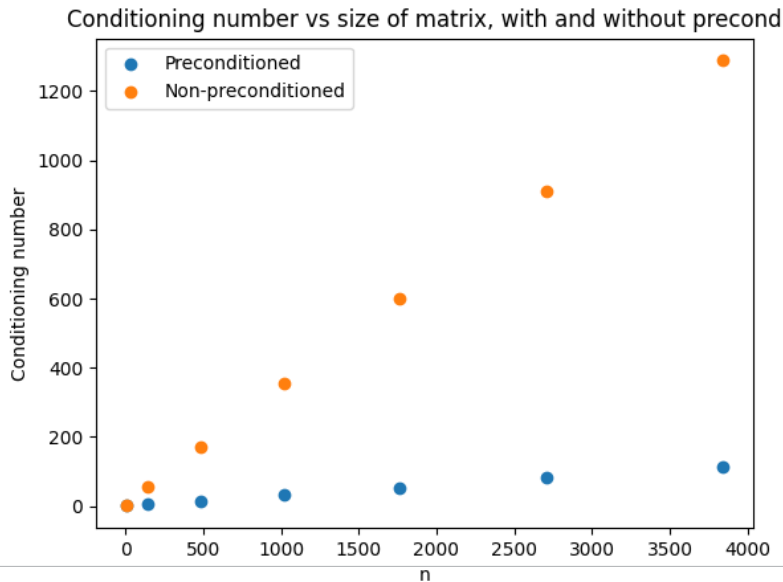
Scientific Computing

V. Kußmaul,  
N. Thorin

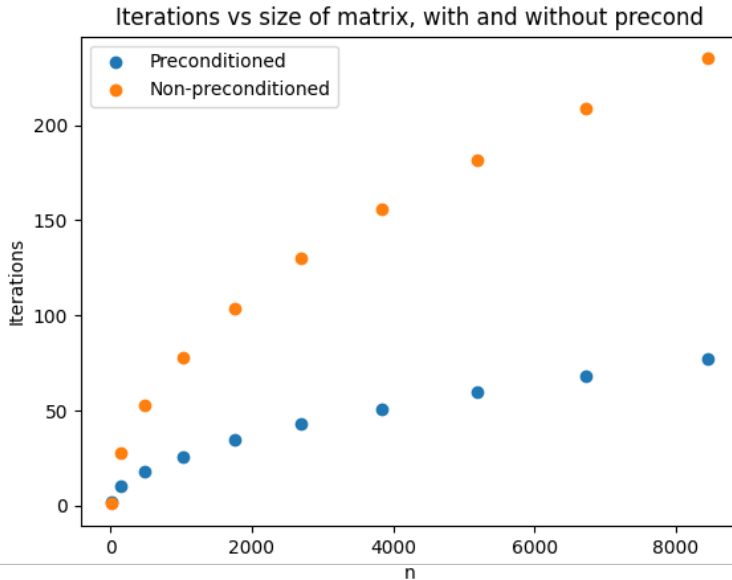
# Background/problem/mathematics/preconditioner etc...



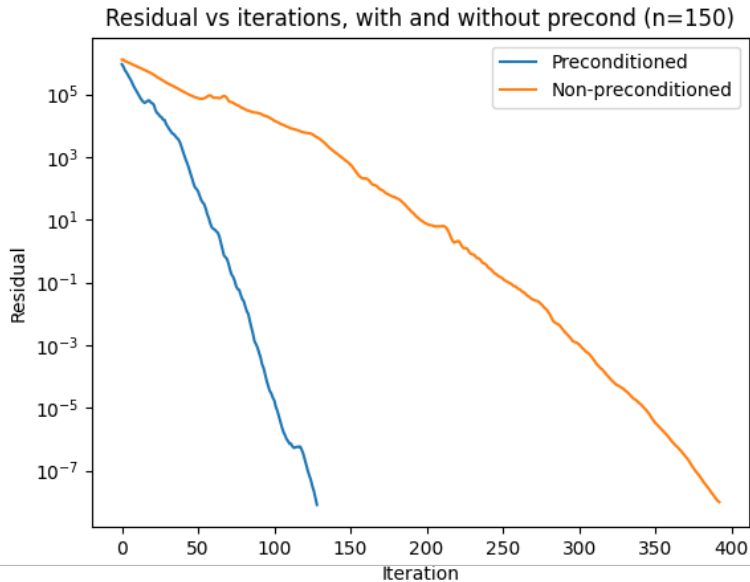
# Results (conditioning number)



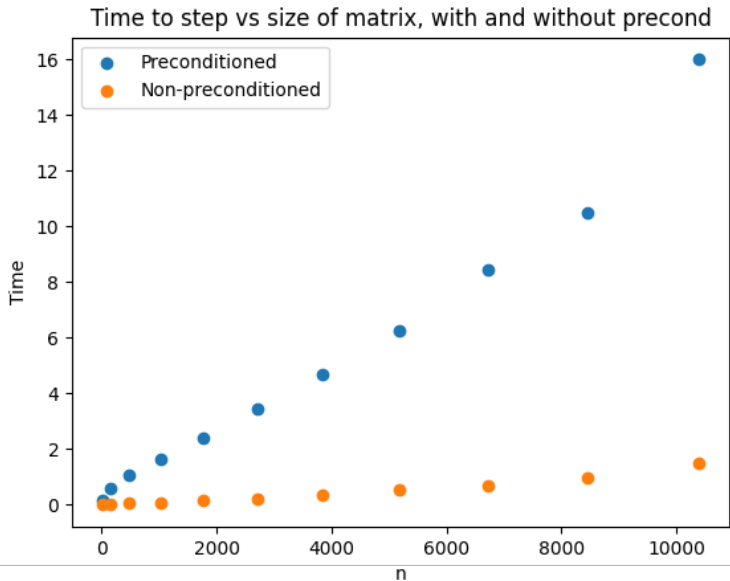
# Results (iterations)



# Results (residual)



# Results (time)



- [1] [Shmuel Agmon](#).  
Princeton University Press, Princeton, NJ; University of Tokyo Press, Tokyo, 1982.
- [2] [Volker Bach, Jürg Fröhlich, and Israel Michael Sigal](#).  
*Comm. Math. Phys.*, 207(2):249–290, 1999.
- [3] [P. Deift, W. Hunziker, B. Simon, and E. Vock](#).  
*Comm. Math. Phys.*, 64(1):1–34, 1978/79.
- [4] [M. Griesemer](#).  
*J. Funct. Anal.*, 210(2):321–340, 2004.
- [5] [Takeru Hidaka and Fumio Hiroshima](#).  
*Rev. Math. Phys.*, 22(10):1181–1208, 2010.
- [6] [Fumio Hiroshima](#).  
*Adv. Math.*, 259:784–840, 2014.
- [7] [Fumio Hiroshima](#).  
In *Analysis and operator theory*, volume 146 of *Springer Optim. Appl.*, pages 225–250. Springer, Cham, 2019.
- [8] [Fumio Hiroshima and Oliver Matte](#).  
*Rev. Math. Phys.*, 34(2):Paper No. 2250002, 84, 2022.
- [9] [Oliver Matte](#).  
*Rev. Math. Phys.*, 28(5):1650011, 90, 2016.
- [10] [Barry Simon](#).  
*J. Functional Analysis*, 32(1):97–101, 1979.

