# Notes on Compressed Sensing

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## Introduction

In many practical problems we need to infer quantities of interest from measured information.

In signal and image processing we want to reconstruct signal from measured data. When the information acquisition process is linear, the problem reduces to solving a linear system of equations. Let us denote with the signal of interest, and with the observed data. The observed data is connected to the signal of interest via

(1)

The matrix models

## References

[Compressed Sensing, David L. Donoho, Stanford U., 2004](https://github.com/dimitarpg13/spectral_analysis/blob/main/literature/articles/compressed_sensing/CompressedSensingDonoho2004.pdf)

[Mathematical Introduction to Compressed Sensing, Simon Foucart, Holger Rauhut, Springer, 2010](https://github.com/dimitarpg13/spectral_analysis/blob/main/literature/articles/compressed_sensing/MathematicalIntroductionToCompressedSensingRauhut.pdf)