spectrum

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Abstract

Definition

The spectrum of a linear operator $\mathcal{F}$ is the set of values λ for which the operator $\mathcal{F} - \lambda \mathrm{Id}$ fails to be invertible (Müller, 2003). The notion of a spectrum can then be naturally extended to any object for which an associated linear operator can be defined. For example, the spectrum of a square matrix $\mathbf{A} \in \mathbb{R}^{d \times d}$ is obtained via the spectrum of the associated linear operator (Horn and Johnson, 1991). As another example, the spectrum of a stochastic process can be defined via a linear operator constructed from its covariance function (Rasmussen and Williams, 2006).

Cross References

linear operator, matrix, stochastic process

References

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3. Rasmussen and Williams (2006). Gaussian Processes for Machine Learning. MIT Press, Cambridge, MA, USA.