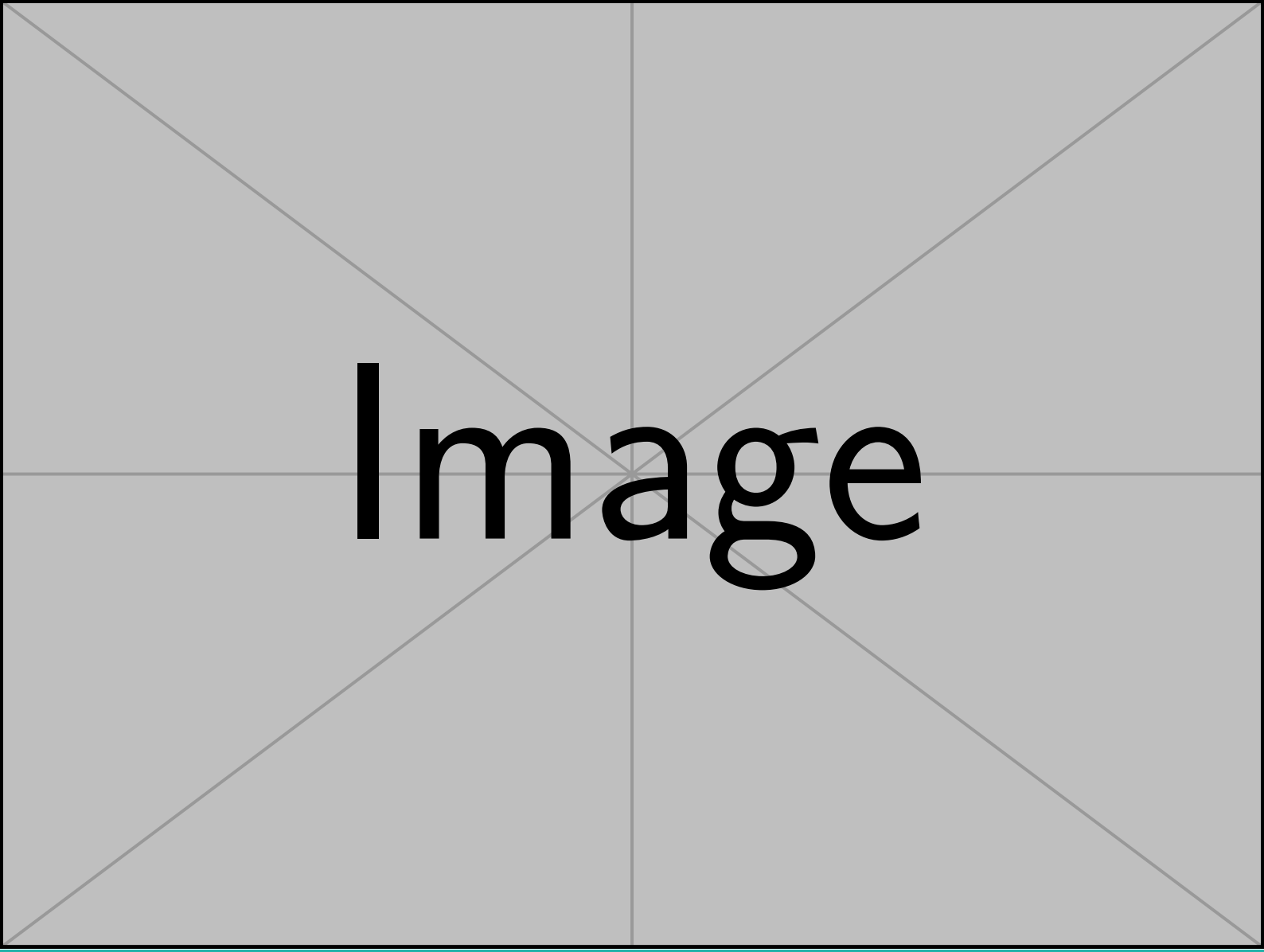

Analyse Harmonique

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Preface

This is the preface of the book…

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1.1 Fourier Expansion

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2.1 Mean Convergence

Lemma 2.1 (Riemann-Lebesgue Lemma)

Let $f(x) \in R[a,b]$, $g(x)$ has a period T and $g(x) \in R[0,T]$, then:

$$\lim_{p\to+\infty} \int_a^b f(x)g(px)\,\mathrm{d}x = \int_a^b f(x)\,\mathrm{d}x \cdot \frac{1}{T}\int_0^T g(t)\,\mathrm{d}t.$$

A special case is when $g(x) = \sin x$ or $g(x) = \cos x$, then:

$$\lim_{p\to+\infty} \int_a^b f(x)\sin(px)\,\mathrm{d}x = \int_a^b f(x)\cos(px)\,\mathrm{d}x = 0.$$

♡

2.2 Pointwise Convergence

Chapter 3 Fourier Transform on $\mathbb{R}$

Chapter 4 Fourier Transform on $\mathbb{R}^n$

Chapter 5 Finite Fourier Analysis

Chapter 6 Dirichlet Theorem

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