THE RADON TRANSFORM

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Abstract. This is an overview of a project for the subject "Wavelets – Functional Analytical Basics" in the summer semester of 2025 @ JKU Linz.

The d–dimensional Radon transform of a function $f : \mathbb{R}^d \to \mathbb{R}$ is defined as

$$\mathcal{R} f(\sigma, \theta) \stackrel{\text{def}}{=} \int_{\langle x \,|\, \theta \rangle = \sigma} f(x) \, \mathrm{d}x, \qquad (\sigma, \theta) \in \mathbb{R} \times \mathbb{S}^{d-1}.$$

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