

$$\int_I f(x)g(x)w(x)dx$$

$$\int_I (f(x))^2 w(x)dx$$

$$f \in L^2, f^{(k)} \in L^2$$

$$k=1,2,\dots$$

$$L_n^{(\alpha)}(x) = c_n \times L_{n-1}^{(\alpha)}(x)$$

$$n > 1$$

$$f \in L^2, f^{(k)} \in L^2$$

Ortogonal Polinomlar

Simplekste Ortogonal Polinomlar

$\mathbf{x} \in \mathbb{R}^d$ için $|\mathbf{x}| := x_1 + \dots + x_d$ ve $\vec{\gamma} = (\gamma_1, \gamma_{d+1}) \in \mathbb{R}^{d+1}$,
 $\gamma = (\gamma_1, \dots, \gamma_d)$ olsun.

$$T^d = \{ \mathbf{x} \in \mathbb{R}^d : x_1 \geq 0, \dots, x_d \geq 0, 1 - |\mathbf{x}| \geq 0 \}$$

simplekste $W_{\vec{\gamma}}(\mathbf{x}) = x_1^{\gamma_1} \dots x_d^{\gamma_d} (1 - |\mathbf{x}|)^{\gamma_{d+1}}$, $\gamma_i > -1$ ağırlık fonksiyonuna göre

$$(f, g)_{\vec{\gamma}} = \int_{T^d} f(\mathbf{x})g(\mathbf{x})W_{\vec{\gamma}}(\mathbf{x})d\mathbf{x}$$

iç çarpımına göre ortogonal olan polinomların uzay $\{W_{\vec{\gamma}}\}_{\vec{\gamma}}$ olarak



Gebiet



Voraussetzung

$$f \in C^1, f^{(k)} \in C$$
$$\int f$$





ÇIKIŞ
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