فهرست

فصل اول

قضایا و مفاهیم مقدماتی

۱.۱ مقدمه

یک معادله انتگرال، معادله‌ای است که در آن تابع مجهول $u(x)$ زیر علامت انتگرال قرار دارد. یک شکل عمومی معادله انتگرال به صورت زیر است:

$$u(x) = f(x) + \lambda \int_{\alpha(x)}^{\beta(x)} K(x,t)u(t)dt, \qquad (۱.۱)$$

فصل دوم

معادلات انتگرال-دیفرانسیل تفاضلی فردهلم خطی مرتبه بالاتر

۱.۲ مقدمه

همان‌طور که در فصل قبل اشاره شد معادلات انتگرال-دیفرانسیل در کاربردهای زیادی همچون مسایل مهندسی، فیزیک و بیولوژیک وغیره علاقه زیادی از اهل علم را به خود جلب کرده‌اند. روش‌های عددی حل معادلات انتگرال-دیفرانسیل فردهلم در بسیاری از تحقیقات و مطالعات بررسی شده‌اند. در سال‌های اخیر نیز، توجه زیادی به بررسی و مطالعه‌ی معادلات دیفرانسیل تفاضلی، از جمله معادلات شامل تغییرات تابع نامعین و مشتقات آن و همچنین معادلات انتگرال-دیفرانسیل تفاضلی معطوف شده است. این نوع معادلات بارها به عنوان یک مدل بیولوژی ریاضی و علوم فیزیک مطرح شده‌اند. معادله انتگرال دیفرانسیل نسبی یک مدل خوب برای الاستیسیته‌ی کشسان است. [۱۳]

مراجع

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واژه‌نامه فارسی به انگلیسی

بسط تیلور	Taylor expand
تبدیل لاپلاس	Laplas conversion
توابع متعامد	Orthogonal functions
توابع مولد	Generating functions
چندجمله‌ای‌های چبیشف	Chebyshev polynomials
چندجمله‌ای‌های لژاندر	Legendre polynomials
حل عددی	Numerical Solution
روش تاو	Tau method
ضرایب ثابت	Fined cofficients
ضرایب متغیر	Variable cofficients
عملگر	Operation
فضای برداری	Vector space
ماتریش مؤثر	Operational matrix
معادلات انتگرال-دیفرانسیل	Differential integral equations
معادلات انتگرال دوبعدی ولترا	Two-Dimentional Volterra integral equations
معادلات انتگرال دوبعدی فردهلم	Two-Dimentional Fredholm integral equations
معادلات انتگرال-دیفرانسیل تفاضلی	Differential-Difference integral equations
معادلات انتگرال منفرد	Single integral equations
هسته	Kernel

واژه‌نامه انگلیسی به فارسی

Chebyshev polynomials .... چندجمله‌ای‌های چبیشف

Differential-Difference integral equations .... معادلات انتگرال-دیفرانسیل تفاضلی

Difference integral equations .... معادلات انتگرال-دیفرانسیل

Fined cofficients .... ضرایب ثابت

Generating functions .... توابع مولد

Kernel .... هسته

Laplas conversion .... تبدیل لاپلاس

Logendre polynomials .... چندجمله‌ای‌های لژاندر

Numerical solution .... حل عددی

Operation .... عملگر

Operational matrix .... ماتریس مؤثر

Orthogonal functions .... توابع متعامد

Single integral equations .... معادلات انتگرال منفرد

Tau method .... روش تاو

Taylor expand .... بسط تیلور

Two-Dimentional Fredholm integral equations .... معادلات انتگرال دوبعدی فردهلم

Two-Dimentional volterra integral equations .... معادلات انتگرال دوبعدی ولترا

Variable cofficients .... ضرایب متغیر

Vector space .... فضای برداری