

Regularization Methods And Finite Element Approximation Of Hemivariational Inequalities With Applications To Nonmonotone Contact Problems

Extended Finite Element and Meshfree Methods Extended Finite Element Method Advanced Boundary Element Methods Multigrid Methods for Finite Elements Least-Squares Finite Element Methods Regularization Methods for Ill-Posed Optimal Control Problems Finite Element Methods for Viscous Incompressible Flows Finite Element and Boundary Methods in Structural Acoustics and Vibration Electrocardiographic Imaging Mathematical and Numerical Approaches for Multi-Wave Inverse Problems Iterative Regularization Methods for Nonlinear Ill-Posed Problems Finite Elements, Electromagnetics and Design Handbook of Analytic Computational Methods in Applied Mathematics Computational Fluid and Solid Mechanics 2003 Inverse Problems in Engineering Mechanics III Artificial Intelligence in Heart Modelling Numerical Models in Geomechanics Analytical Methods in Petroleum Upstream Applications International Digital Imaging Correlation Society Finite Elements in Water Resources

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The introduction of resolution-consistent regularization may pave the way for adaptive finite element methods (FEM) to be used for solving inverse problems. Despite its many successes in reducing complexity and enhancing efficiency for solving PDE-based forward problems, adaptive FEM has not yet been widely applied to inverse problems.

[Finite-Element-Based Discretization and Regularization ...](#)

An effective and reliable approach to updating finite element (FE) models of real structures is to utilize a sensitivity based strategy. ... Both regularization methods are compared in a ...

[\(PDF\) Regularisation methods for finite element model updating](#)

For the finite-element DIC, a regularized digital volume correlation based on the equilibrium gap method was developed by Leclerc to output displacement field in voxel scale. However, this method may require some a priori information to take proper regularization, which is usually not available for displacement field with irregular structure.

[A regularized finite-element digital image correlation for ...](#)

the plain regularization (PR) method [36][24], with a second-order $U = H_0(\text{curl}; \quad) \quad H(\text{div}; \quad ; \quad)$ -elliptic problem. For smooth \quad , one may consider the classical continuous finite element method for the PR method. But, when the solution is only in H^r for some $r < 1$, the continuous finite element method cannot give a correct solution [37][47][10][25][24].

[A DELTA-REGULARIZATION FINITE ELEMENT METHOD FOR A DOUBLE ...](#)

Regularization methods for finite element model updating (1998) by H AHMADIAN Venue: Mechanical Systems and Signal Processing: Add To MetaCart. Tools. Sorted by: Results 1 - 10 of 13. Next 10 [Damage identification using inverse methods by ...](#)

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Generally, the finer the discretized mesh is, the better the spatial resolution. However, over-fine mesh may exacerbate the ill-posedness of the BLT inverse problem and increase the computational cost in the meantime. Hence, in [15, 16], adaptive finite element method was introduced to BLT reconstructions. Numerical simulations with regular phantom suggest that, compared with the globally uniform discretization, adaptive methods can reduce the data size and improve the computational efficiency.

[Sparse Regularization-Based Reconstruction for ...](#)

A damped symplectic scheme, combined with the finite element method, is developed for the numerical implementation of SOAR, which yields a novel iterative regularization scheme for solving inverse source problems. Several numerical examples are given to show the accuracy and the acceleration effect of SOAR.

[Second order asymptotical regularization methods for ...](#)

Tikhonov regularization is frequently used for FE model updating problems, but the selection of a proper regularization parameter and a good initial estimate of the stiffness parameters is difficult. This paper proposes an alternative, density-filtering-based method where the filter radius acts as regularization parameter.

[Density filtering regularization of finite element model ...](#)

Some numerical methods can be applied to approximate the singular solution, such as N é d é lec finite elements [80,81], weighted regularization technique [82, 83] and stabilized finite element...

[\(PDF\) Weighted regularization of Maxwell equations in ...](#)

The finite element method is the most widely used method for solving problems of engineering and mathematical models. Typical problem areas of interest include the traditional fields of structural analysis, heat transfer, fluid flow, mass transport, and electromagnetic potential. The FEM is a particular numerical method for solving partial differential equations in two or three space variables. To solve a problem, the FEM subdivides a large system into smaller, simpler parts that are called fini

[Finite element method - Wikipedia](#)

RAIRO (9e ann é e. ao ù t 1975, R-2, p 77-84) APPROXIMATION BY FINITE ELEMENT FUNGTIONS USING LOCAL REGULARIZATION (*) par Ph. CL ÉMENT (I)Communicated by P G CIARLET Abstract The aim ofthis paper is to give an elementary proof of a theorem of approximation

[Approximation by finite element functions using local ...](#)

p-FEM or the p-version of the finite element method is a numerical method for solving partial differential equations. It is a discretization strategy in which the finite element mesh is fixed and the polynomial degrees of elements are increased such that the lowest polynomial degree, denoted by \quad , approaches infinity.

[p-FEM - Wikipedia](#)

A Load Identification Application Technology Based on Regularization Method and Finite Element Modified Model (1) L-Curve Criterion. In the optimization problem of Tikhonov regularization, the norm of the regularization and the... (2) GCV Curve Criterion. The generalized crossvalidation (GCV) curve ...

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4 solution is known in the domain and we wish to reconstruct the source term. The first problem can be associated with an ill-posed boundary control problem or a data assimilation

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A smooth partition of unity finite element method for vortex particle regularization. Matthias Kirchhart, Shinnosuke Obi. Department of Mechanical Engineering; Research output: Contribution to journal › Article. Overview; Fingerprint; Abstract. We present a new class of C^∞ -smooth finite element spaces on Cartesian grids, based on a ...

[A smooth partition of unity finite element method for ...](#)

In finite element (FE) model updating, regularization methods are required to alter the ill-conditioned system of equations towards a well-conditioned one. The present study addresses the regularization parameter determination when implementing the Tikhonov regularization technique in output-error-based FE model updating.

[Adaptive regularization parameter optimization in output ...](#)

The discretization in space is performed using a piecewise linear discontinuous Galerkin (DG) approximation of the free surface elevation and (linear) continuous finite elements for the bathymetry. Our approach guarantees compatibility of the discrete forward and inverse problems: for a given DG solution of the forward SWE problem, the underlying continuous bathymetry can be recovered exactly.