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Nota di contenuto	ESPReso 3.1 – Molecular Dynamics Software for Coarse-Grained Models: A. Arnold, O. Lenz, S. Kesselheim, R. Weeber, F. Fahrenberger, D. Roehm, P. Košovan, C. Holm -- On the Rate of Convergence of the Hamiltonian Particle-Mesh Method Onno Bokhove, Vladimir Molchanov, Marcel Oliver, Bob Peeters -- Peridynamics: A Nonlocal Continuum Theory -- Etienne Emmrich, Richard B. Lehoucq, Dimitri Puhst --

Immersed Molecular Electrokinetic Finite Element Method for Nano-Devices in Biotechnology and Gene Delivery: Wing Kam Liu, Adrian M. Kopacz, Tae-Rin Lee, Hansung Kim, Paolo Decuzzi -- Corrected Stabilized Non-conforming Nodal Integration in Meshfree Methods: Marcus Rüter, Michael Hillman, Jiun-Shyan Chen -- Multilevel Partition of Unity Method for Elliptic Problems with strongly Discontinuous Coefficients: Marc Alexander Schweitzer -- HOLMES: Convergent Meshfree Approximation Schemes of Arbitrary Order and Smoothness: Agustín Bompadre, Luigi E. Perotti, Christian J. Cyron, Michael Ortiz -- A Meshfree Splitting Method for Soliton Dynamics in Nonlinear Schrödinger Equations: Marco Caliari, Alexander Ostermann, Stefan Rainer -- A Meshless Discretization Method for Markov State Models Applied to Explicit Water Peptide Folding Simulations: Konstantin Fackeldey, Alexander Bujotzek, Marcus Weber -- Kernel-based Collocation Methods versus Galerkin Finite Element Methods for Approximating Elliptic Stochastic Partial Differential Equations: Gregory E. Fasshauer, Qi Ye -- A Meshfree Method for the Analysis of Planar Flows of Inviscid Fluids: Vasily N. Govorukhin -- Some Regularized Versions of the Method of Fundamental Solutions: Csaba Gáspár -- A Characteristic Particle Method for Traffic Flow Simulations on Highway Networks: Yossi Farjoun, Benjamin Seibold -- Meshfree Modeling in Laminated Composites: Daniel C. Simkins, Jr., Nathan Collier, Joseph B. Alford.

Sommario/riassunto

Meshfree methods are a modern alternative to classical mesh-based discretization techniques such as finite differences or finite element methods. Especially in a time-dependent setting or in the treatment of problems with strongly singular solutions their independence of a mesh makes these methods highly attractive. This volume collects selected papers presented at the Sixth International Workshop on Meshfree Methods held in Bonn, Germany in October 2011. They address various aspects of this very active research field and cover topics from applied mathematics, physics and engineering.
