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Nota di contenuto	F. Franzelin, P. Diehl, D. Pflüger: Spatially adaptive sparse grid collocation for multivariate peridynamic simulations -- G. anzenmüller, S. Hiermaier, M. May: Improvements to the Prototype Micro-Brittle Linear Elasticity Model of Peridynamics -- C. Gaspar: Regularization and Multi-Level Tools in the Method of Fundamental Solution -- S. Bond, R. Lehoucq, S. Rowe: A Galerkin Radial Basis Function Method for Nonlocal Diffusion -- P. Henning, P. Morgenstern, D. Peterseim: Multiscale Partition of Unity Method -- D. Zhou, B. Seibold, D. Shirokoff, P. Chidyagwai, R.R. Rosales: Meshfree Finite Differences for Vector Poisson and Pressure Poisson Equations with Electric Boundary Conditions -- C.T Wu: An Immersed Meshfree Galerkin Approach for Particle-Reinforced Composite Analysis -- A. Jefferies, J. Kuhnert, L. Aschenbrenner, U. Giffhorn: Finite Pointset Method for the Simulation of a Vehicle travelling through a Body of Water -- S.C. Brenner, C.B.

Davis, L. Sung: A partition of unity method for the obstacle problem of simply supported Kirchhoff plates -- Q. Du, X. Tian: Robust Discretization of Nonlocal Models Related to Peridynamics -- Z. Dai, M. A. Bessa, S. Li, W.K. Liu: Particle Method Modeling of Nonlocal Multiresolution Continua -- C. Dehning, C. Bierwisch and T. Kraft: Co-simulations of discrete and finite element codes -- S. Wu, M.A. Schweitzer: Numerical Integration of pre-computed Enrichment Functions in the PUM -- P. Diehl, M.A. Schweitzer: Efficient neighbor search for particle methods on GPUs -- M.A. Schweitzer, A. Ziegenhagel: Dispersion Properties of the Partition of Unity Method \& Explicit Dynamics.

Sommario/riassunto

Meshfree methods, particle methods, and generalized finite element methods have witnessed substantial development since the mid 1990s. The growing interest in these methods is due in part to the fact that they are extremely flexible numerical tools and can be interpreted in a number of ways. For instance, meshfree methods can be viewed as a natural extension of classical finite element and finite difference methods to scattered node configurations with no fixed connectivity. Furthermore, meshfree methods offer a number of advantageous features which are especially attractive when dealing with multiscale phenomena: a priori knowledge about particular local behavior of the solution can easily be introduced in the meshfree approximation space, and coarse-scale approximations can be seamlessly refined with fine-scale information. This volume collects selected papers presented at the Seventh International Workshop on Meshfree Methods, held in Bonn, Germany in September 2013. They address various aspects of this highly dynamic research field and cover topics from applied mathematics, physics and engineering.