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Ihr Zeichen
WR Oberseminar 3.

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3. Mai 2011, 15:15Uhr, SE37

Oberseminar Wissenschaftliches Rechnen

Einladung zum Vortrag von **Greg von Winckel** am Di. 03.05.2011 um 15:15 Uhr im Raum SE37.

A globalized Newton method for the optimal control of multiple interacting fermions

A fast globalized Newton method is presented for computing the optimal time-dependent amplitude of a laser field to induce a desired energy state transition in a system of several confined fermions with Coulomb interaction. Because standard many body approximation techniques such as Hartree-Fock tend to be only valid for many particles, the full multi-body Hamiltonian is used for systems of two through seven particles. While the computational cost of solving PDEs with several independent variables typically becomes prohibitively high, we show that an efficient discretization strategy can be implemented for which the numerical solution of the multi-body problem computationally tractable. This is critical for PDE-constrained optimization problems, where the state and adjoint equations must typically be solved many times.

Wir freuen uns über Ihr zahlreiches Erscheinen.

Mit freundlichen Grüßen

Prof. Dr. Alfio Borzi