

Prof. dr hab. Gerd Roepke

z Uniwersytetu w Rostoku

Wygłosi cykl wykładów pt.:

"Thermodynamic Green Functions and Nonequilibrium Statistical Physics"

Terminy wykładów w maju 2013 r.:

Środa 22.05.2013 r. sala 422 w godzinach 14.00-18.00

Czwartek 23.05.2013 r. sala 422 w godzinach 16.00-18.00

1. Many-particle systems in thermodynamic equilibrium (second quantization, statistical operator, elementary perturbation theory)
2. Thermodynamic Green's functions (definitions, spectral function, diagram technique)
3. Microscopic phenomena and partial summations (self-energy and quasiparticles, polarization function and screening, bound states, cluster expansions)
4. Nonequilibrium systems (irreversible processes, nonequilibrium statistical operator)
5. Stochastic processes (one-step process and radioactive decay, Brownian motion and Langevin process, Fokker-Planck equation)
6. Quantum master equations (Pauli equation, reaction and relaxation processes, interaction with the radiation field)
7. Kinetic equations (Boltzmann equation, transport coefficients, random phase approximation and Vlasov equation, hydrodynamic equations)
8. Linear response theory (Fluctuations and response in equilibrium systems, variational approach, transport processes)