EINLADUNG
ZUM PHYSIKALISCHEN KOLLOQUIUM

AM MONTAG, 5. NOVEMBER 2012 UM 17.15 UHR
HS 46/270

ES SPRICHT: Prof. Dr. Jacques Tempère
Universität Antwerpen

Thema:

"Schrödinger's money:
the strange marriage between quantum mechanics and finance"

In the path-integral formulation of quantum mechanics, transition amplitudes are calculated as a sum over all possible paths realizing the transition. Each path is weighed by the exponential of the action functional, such that in the limit of small \( \hbar \) the major contribution comes from the classical trajectory. Including quantum effects corresponds to including fluctuating paths. Economists with a physics background noticed in the nineties that also in the valuation of the expected return of financial products it is necessary to perform a sum over possible histories. In particular, the same techniques applicable to solve quantum mechanical path integrals can be applied to the valuation of financial derivatives. This has led to the birth of 'quantum finance', which I will review in this talk, from the background of our condensed matter physics research group. I will also explain how some failures of early financial models led to more complicated models, that can only be solved using path integration and techniques from quantum mechanics, showing examples of our own research on timer options, and jump diffusion models.

Der Gast wird betreut von Herrn Prof. Widera.

GÄSTE SIND HERZLICH WILLKOMMEN.
KAFFEEAUSSCHANK AB 17.00 UHR

Kaiserslautern, den 30.10.2012

DIE DOZENTEN DES FACHBEREICHS