

REACTION RATE THEORY WITH ACCOUNT OF DISCRETE BREATHERS

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Organized by JFR Archilla and the Group of Nonlinear Physics

OUTLINE

1. Arrhenius' law – how universal is it?
2. Escape rate with account of the potential barrier modulation
3. Discrete Breathers
4. Kramer's rate of escape from potential wells
5. Escape rate with account of time-periodic potential barrier modulation
6. Breather-induced amplification of reaction rates:
thermal equilibrium and radiation-induced thermal spikes
7. Outstanding theoretical problems
8. Applications in physics of radiation effects:
Radiation-induced “annealing” of voids
Self-organization of voids under irradiation
Tracks in mica muscovite
Long range effects in metals
9. Summary

