

Some missing references (update initiated Jan 2011)

Early references on Metastability: Transition State Theory in chemical reactions

A. Marcelin *Ann. Chim. Phys.* **3**, 158, 1915. (*)

H. Eyring and M. Polanyi. *Z. Physik. Chem. B.* **12**, 279, 1931.

H. Eyring. *The activated complex in chemical reactions.* *J. Chem. Phys.* **3**, 107—115, 1935.

H. A. Kramers. *Brownian motion in a field of force and the diffusion model of chemical reactions.* *Physica*, (Utrecht) **7**, 284—304, 1940.

E.P. Wigner 1937 *J. Chem. Phys.*, **5**, 720

E. P. Wigner 1938 *Trans. Faraday Soc.* **34** 29

For a discussion on some of these works, the reader might be referred to:

- N. G. van Kampen, *Stochastic Processes in Physics and Chemistry*, North-Holland, Amsterdam, 1981

- Charles Jaffé, Shinnosuke Kawai, Jesús Palacian, Patricia Yanguas, T. Uzer. *A New Look at the Transition State: Wigner's Dynamical Perspective Revisited.* (available on the web)

- T. Uzer, Charles Jaffé, Jesús Palacian, Patricia Yanguas, Stephen Wiggins. *The geometry of reaction dynamics.* *Nonlinearity* **15**, 957—992, 2002

Freidlin and Wentzell theory: While discussing Freidlin and Wentzell theory, we missed an important early reference where metastability has been discussed:

M. I. Freidlin. *Sublimiting Distributions and Stabilization of Solutions of Parabolic Equations with a Small Parameter*, *Soviet Math. Dokl.* **235**, 5, pp. 1042-1045, 1977

Chapter 1:

A. de Acosta. *On large deviations of empirical measures in the tau topology*, *J. Appl. Prob.* **31A**, 41-47, 1994.

Chapter 3:

A. Meda, P. Ney. *A conditioned law of large numbers for Markov additive chains* *Studia Sc. Math. Hungarica* **34**, 305-316. 1998.

A. Meda, P. Ney. *The Gibbs conditioning principle for Markov chains* In: *Perplexing Problems in Probability, Festschrift in Honor of Harry Kesten.* Serie *Progress in Probability* **44**, 385-398. Ed: M. Bramson y R. Durrett. Birkhäuser. 1999.

(*)

It seems this is a reference to be quoted, though the authors could not get hold of it, and are grateful if some friend can get it.

Chapter 4:

B. Gaveau and L.S. Schulman. Theory of non-equilibrium first order phase transitions for stochastic dynamics. *J. Math. Phys.* **39**, 1517-1533, 1998.

A. Bovier, M. Eckhoff, V. Gayrard, and M. Klein. Metastability and low lying spectra in reversible Markov chains. *Comm. Math. Phys.* **228**, 219–255, 2002.

Chapter 5:

M.Cottrell, J. Claude Fort, G. Malgouyres. Large Deviations and Rare Events in the Study of Stochastic Algorithms. *IEEE Trans. On Autom. Control* AC-28, 9. 907—920, 1983.

Chapters 6 and 7:

L. Miclo. About relaxation time of finite generalized Metropolis algorithms. *Ann. Appl. Probab.* **12**, 4, 1492–1515, 2002.

L. Miclo. Comportement de specters d'opérateurs de Schrödinger à basse température. *Bull. Sci. Math.* 119, 529—553, 1995.

J. Lauwers, A. Verbeure. Metastability in the BCS model. *J. Phys. A. Math. Gen.* 34, 5517—5530, 2001.

Recent surveys, not available at time of the publication of the book:

F. den Hollander. Metastability under stochastic dynamics. *Stochastic Processes and their Applications, Volume 114, Issue 1, November 2004, Pages 1-26*

A.Bovier. *Metastability: A potential theoretic approach*. Proceedings of the ICM, Madrid, Spain 2006

F. den Hollander. *Metastability under stochastic dynamics*. Three lectures given at the 5th Prague Summer School on Mathematical Statistical Physics, 2006. (available on the page of the School)

A.Bovier. *Metastability*. Lectures given at the 5th Prague Summer School on Mathematical Statistical Physics, 2006 (available on the page of the School)

Other recent references: (updated Jan 2008)

S. Herrmann, P. Imkeller The exit problem for diffusions with time-periodic drift and stochastic resonance. *Ann. Appl. Probab.* **15**, no. 1A, 39–68, 2005.

P. Imkeller, I.Pavlyukevich. Metastable behaviour of small noise Lévy-driven diffusions. (arXiv: math.PR/0601771)

A. Bovier, M. Eckhoff, V. Gaynard, M. Klein. Metastability in reversible diffusion processes I. Sharp asymptotics of capacities and exit times. *J. Eur. Math. Soc.* **6**, 399—424, 2004.

Michael Eckhoff. Precise asymptotics of small eigenvalues of reversible diffusions in the metastable regime. *Ann. Probab.* **33**, 244-299, 2005

A. Bovier, V. Gaynard, M. Klein. Metastability in reversible diffusion processes II. Precise asymptotics for small eigenvalues. *J. Eur. Math. Soc.* **7**, 69--99, 2005.

For more recent references see the new book by A. Bovier and Frank den Hollander: It presents a concise and authoritative potential-theoretic approach on metastability.

Metastability A Potential-Theoretic Approach

Authors: **Bovier**, Anton, **den Hollander**, Frank

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