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Stellingen
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Gibbs-non-Gibbs Transitions and Vector-Valued Integration
van
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1. A transformed mean-field system is Gibbsian if and only if the rate function of the large deviation principle of the conditional probability of the initial state given the transformed state has a unique global minimiser for each possible transformed state. [Theorem 2.1.7]

2. Gibbsianness of the evolved state of a mean-field system of real-valued components evolving as independent Brownian motions depends fully on the convex regularity of the initial potential. [Corollary 2.1.12]

3. Gibbsianness of the initial state or the evolved state depends fully on the regularity of the initial potential or the evolved potential, respectively. [Corollary 2.C.7 and Corollary 2.C.9]

4. Conditional on the end configuration, not the large deviation rate function of the whole path, but rather the large deviation rate function of the initial configuration indicates Gibbsianness of the evolved state. [Theorem 2.1.8(c) and Corollary 2.1.9]

5. The conditional probabilities of a sequence of probability measures that satisfies the large deviation principle with rate function \( I \), provided these can be described in terms of continuous kernels, satisfy a large deviation principle with a rate function that can be described in terms of \( I \) if and only if certain restrictive conditions are satisfied. [Chapter 4 in particular, Theorems 4.1.2 and 4.1.3]
6. Integrals on functions with values in a partially ordered vector space $E$ that is only assumed to be directed can be extended by the vertical extension, and under suitable conditions also by the lateral extension. If these extensions can be made, then the order of applying the extensions matters, unless $E$ satisfies a certain condition that is implied by $\sigma$-Dedekind completeness. Applying both extensions to the real-valued simple functions produces the classical integrable functions. [Chapter 5]

7. Every linear order bounded map between ordered Banach spaces with closed and generating cones is continuous. [Theorem 6.3.11]

8. Every Archimedean directed ordered vector space can be covered by ordered Banach spaces with closed and generating cones. This is the key ingredient for extending the notion of Bochner integral to functions with values in such a vector space. [Chapter 6]

9. In a mean-field world, your friends are neighbours, but they are indistinguishable from your enemies.

10. There is no such thing as good advice.

11. In order to understand a mathematical statement in full depth, one should first distrust it and then convince oneself that it is correct.