CORRECTION

Correction to: PDE/Statistical Mechanics Duality: Relation Between Guerra's Interpolated *p*-Spin Ferromagnets and the Burgers Hierarchy

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Correction to: Journal of Statistical Physics (2021) 183:12
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The original version of this article unfortunately contained an error. The authors would like to correct the error with this erratum.

The present erratum provides the corrections for fixing the references problem.

- Introduction, page 1, line 4: after "the equilibrium dynamics of spin glass models" the references are [1,2] instead of [62,75]
- Introduction, page 2, line 3: "(see for example [1])" instead of "(see for example [62])"
- Introduction, page 2, line 5: "(whose analysis is motivated by its self-averaging property [3,4])" instead of "(whose analysis is motivated by its self-averaging property [53,54])"
- Introduction, page 2, line 6: "(in particular, the so-called Edward-Anderson overlap [5])" instead of "(in particular, the so-called Edward-Anderson overlap [40])"
- Introduction, page 2, line 8: "has gained a renewed interest with the advent of Deep Learning [6]" instead of "has gained a renewed interest with the advent of Deep Learning [60]"
- Introduction, page 2, line 10: "the ideal tool for investigating information processing in neural networks (see for example [7–17])" instead of "the ideal tool for investigating information processing in neural networks (see for example [2,3,17,19,23,35,38,43,56, 58,71])"
- Introduction, page 2, line 16: "At the same time, rigorous and mathematically transparent approaches can be developed, see for example [18–27]." instead of "At the

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same time, rigorous and mathematically transparent approaches can be developed, see for example [13,47,49,51,67,68,70,80–82]."

- Introduction, page 2, line 18, the correct references are as follows: "For our concerns, the most important one is the Guerra's interpolation scheme, which makes use of sum rules for the computation of relevant quantities [8,28–32] or taking benefit of mechanical analogy or relation with PDEs [10,33–37]"
- Introduction, page 2, line 29: "w.r.t. to the associated Boltzmann–Gibbs measure is in 1–1 correspondence with the elements of the Burgers hierarchy [38–41]." instead of "w.r.t. to the associated Boltzmann–Gibbs measure is in 1–1 correspondence with the elements of the Burgers hierarchy [59,66,74,83]."
- Introduction, page 2, line 36: "Indeed, as firstly suggested in [42]" instead of "Indeed, as firstly suggested in [84]".
- Introduction, page 2, line 38: "see also [43–50]" instead of "see also [7,12,16,29,57,63,72,78]."
- Introduction, page 2, line 40: "Curie–Weiss ferromagnetic model, see [51, 52]" instead of "Curie–Weiss ferromagnetic model, see [8,11]."
- Introduction, page 2, last line: "involving systems with small size [53]" instead of "involving systems with small size [73]"
- Introduction, page 3, line 2: "it has been established [54]" instead of "it has been established [31]"
- Introduction, page 3, line 4: "see also [55]" instead of "see also [39]"
- Section 2, page 4, first line: "(see for example [56])" instead of "(see for example [33])"
- Section 2, page 6, below first equation: "see for example [57]" instead of "see for example [18]"
- Section 2, page 6, last line before Sec. 2.1: "exactly the self-consistency equations for the p-spin ferromagnetic model [57]" instead of "exactly the self-consistency equations for the p-spin ferromagnetic model [18]."
- Section 2.1, page 7, line 2: "see for example [58]" instead of "see for example [26]"
- Section 2.2, page 11, below Eq. 2.38: "by virtue of Egorov's theorem [59]" instead of "by virtue of Egorov's theorem [41]"
- Section 3, page 13, first line of the section: "The Burgers equation [60–62]" instead of "The Burgers equation [25,30,87]"
- Section 3, page 13, below Eq. 3.1

  - "in absence of pressure gradient [62,63]" instead of "in absence of pressure gradient [86,87]"
  - "via Cole-Hopf transform [64, 65]" instead of "via Cole-Hopf transform [34,55]"
  - "the Sharma-Tasso-Olver (STO) equation [39–41]" instead of "the Sharma-Tasso-Olver (STO) equation [66,74,83]"

- Section 3, page 13, below Eq. 3.2: "infinite number of conservation laws [39–41, 66])" instead of "infinite number of conservation laws [66,74,83,85])"
- Section 3, page 14, before Remark 13: "see also [39]" instead of "see also [66]"
- Section 3, page 14, first line of the proof of Lemma 1: "The proof of this Lemma works in the same way of Lemma 1 in [38]" instead of "The proof of this Lemma works in the same way of Lemma 1 in [59]."
- Section 4, page 15, before Definition 10:

  - "Ellis and Newman [67]" instead of "Ellis and Newman [42]"

- "Bogolyubov and co-workers [68, 69]" instead of "Bogolyubov and co-workers [27,28]"
- "especially for disordered systems, see for example [35, 37, 70, 71] and references therein" instead of "especially for disordered systems, see for example [20,22,32,46] and references therein"

- Section 4.2, page 20, below equation 4.15: "Other solutions sharing this structure can be found in [38]" instead of "Other solutions sharing this structure can be found in [59]"
- Conclusions, page 23:

  - "PDE-statistical mechanics duality to p-spin systems with random external field [73, 74]" instead of "PDE-statistical mechanics duality to p-spin systems with random external field [15,61]"
  - "as well as to diluted and finite-connected ferromagnets [75–78]" instead of "as well as to diluted and finite-connected ferromagnets [10,44,64,65]"
  - "For the Sherrington-Kirkpatrick (SK) model, it reads [79]" instead of "For the Sherrington–Kirkpatrick (SK) model, it reads [52]"

- Conclusions, page 25, first line: "(such as TLCs theorems or concentration inequalities [4, 80])" instead of "(such as TLCs theorems or concentration inequalities [54,79])"
- Conclusions, page 25, line 5: "see for example [33] for transport-like PDEs" instead of "see for example [1] for transport-like PDEs"
- Conclusions, page 25, below first equation: "see [36]" instead of "see [21]"
- Conclusions, page 25, line 6 after first equation: "K-RSB overlap distribution [33, 36]" instead of "K -RSB overlap distribution [1,21]"
- Conclusions, page 25, last line of the section: "a very useful tool to investigate properties at the equilibrium of spin-glass models for each interaction order p [56, 81–87]" instead of "a very useful tool to investigate properties at the equilibrium of spin-glass models for each interaction order p [33,36,37,45,69,76,77,87]"
- Ref. 69 has been replaced:

N.N. Bogolyubov, J.G. Brankov, V.A. Zagrebnov, A.M. Kurbatov, N.S. Tonchev, "Some classes of exactly soluble models of problems in quantum statistical mechanics: the method of the approximating Hamiltonian", Russ. Math. Surv. 39, 1–50, 1984.
instead of
Brankov, J.G., Shumovsky, A.S., Zagrebnov, V.A.: On model spin Hamiltonians including long-range ferromagnetic interaction. Physica 78, 183–186 (1974)
The original article has been corrected.

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