UvA-DARE (Digital Academic Repository)

Erratum. Yang's system of particles and hecke algebras

Heckman, G.J.; Opdam, E.M.

DOI

[10.2307/2952460](https://doi.org/10.2307/2952460)

Publication date

1997

Published in

Annals of Mathematics

[Link to publication](#)

Citation for published version (APA):

Heckman, G. J., & Opdam, E. M. (1997). Erratum. Yang's system of particles and hecke algebras. *Annals of Mathematics*, 146, 749-750. <https://doi.org/10.2307/2952460>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Erratum: Yang's System of Particles and Hecke Algebras

G. J. Heckman; E. M. Opdam

The Annals of Mathematics, 2nd Ser., Vol. 146, No. 3. (Nov., 1997), pp. 749-750.

Stable URL:

<http://links.jstor.org/sici?sici=0003-486X%28199711%292%3A146%3A3%3C749%3AEYSOPA%3E2.0.CO%3B2-6>

The Annals of Mathematics is currently published by Annals of Mathematics.

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/annals.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is an independent not-for-profit organization dedicated to creating and preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact support@jstor.org.

Erratum

Yang’s system of particles and Hecke algebras*

By G. J. HECKMAN AND E. M. OPDAM*

In [3] we studied the root system generalization of the problem of n particles on a line with delta-function interaction. This particle system we baptized “Yang’s system of particles”, because of Yang’s important and fundamental contributions in the study of this system ([9], [10]). However, it was rightfully pointed out to us that this attribution of the particle system to Yang alone does not do justice to the groundbreaking work that others did in this area before him. Hence let us try to correct ourselves by giving a brief, but more precise account of the origins of the particle system. We emphasize that we do not mean to detract anything from Yang’s contributions.

The problem of n bosons on a line with delta-function interaction and finite repulsive coupling constant was studied first, with fundamental results, by Lieb and Liniger [5] and Lieb [4]. A year later, but independently, the system was studied by McGuire [6], who was the first to recognize the importance of braid relations in this context. The next stage was the study of “fermions with spin”. Important initial steps were made by McGuire [7], [8] and again by Lieb, in joint work with Flicker [1]. The general repulsive case was solved by Yang [9], and independently by Gaudin [2]. Finally, about one year later Yang [10] solved the case of attractive interaction in general.

We feel that our naming of the particle system, which even appears in the title of our paper, is not correct given the contributions of Lieb, McGuire and others. We therefore suggest to use the commonly accepted name “particle system with delta-function interaction”. In case names are attached to honour the people who made initial and fundamental contributions, the name “LLMFGY-system”, or just short “Lieb-McGuire system” seem to be the most appropriate names.

*Originally published **145** (1) (1997), 139–173.

UNIVERSITY OF NIJMEGEN, TOERNOOIVELD, 6525 ED NIJMEGEN, THE NETHERLANDS
(e-mail address: HECKMAN@SCI.KUN.NL)

UNIVERSITY OF LEIDEN, P.O. BOX 9512, 2300 RA LEIDEN, THE NETHERLANDS
(e-mail address: OPDAM@WI.LEIDENUNIV.NL)

REFERENCES

- [1] M. Flicker and E. H. Lieb, *Delta-function Fermi gas with two-spin deviates*, Physical Review **161** (1) (1967), 179–188.
- [2] M. Gaudin, *Un système à une dimension de fermions en interaction*, Physics Letters **24A** (1967), 55–56.
- [3] G. J. Heckman and E. M. Opdam, *Yang's system of particles and Hecke algebras*, Annals of Math. **145** (1997), 139–173.
- [4] E. H. Lieb, *Exact analysis of an interacting Bose gas. II. The excitation spectrum*, Physical Review **130** (4) (1963), 1616–1624.
- [5] E. H. Lieb and W. Liniger, *Exact analysis of an interacting Bose gas. I. The general solution and the ground state*, Physical Review **130** (4) (1963), 1605–1616.
- [6] J. B. McGuire, *Study of exactly soluble one-dimensional N -body problems*, J. Mathematical Physics **5** (1964), 622–636.
- [7] ———, *Interacting fermions in one dimension. I. Repulsive potential*, J. Mathematical Physics **6** (1965), 432–439.
- [8] ———, *Interacting fermions in one dimension. II. Attractive potential*, J. Mathematical Physics **7** (1966), 123–132.
- [9] C. N. Yang, *Some exact results for the many-body problem in one dimension with repulsive delta-function interaction*, Phys. Rev. Letters **19** (23) (1967), 1312–1315.
- [10] ———, *S matrix for the one dimensional N -body problem with repulsive or attractive δ -function interaction*, Physical Review **168** (5) (1968), 1920–1923.