

Erratum: “A class of superintegrable systems of Calogero type” [J. Math. Phys.47, 093505 (2006)]

Roman G. Smirnov and Pavel Winternitz

Citation: [Journal of Mathematical Physics](#) **48**, 079902 (2007); doi: 10.1063/1.2749406

View online: <http://dx.doi.org/10.1063/1.2749406>

View Table of Contents: <http://scitation.aip.org/content/aip/journal/jmp/48/7?ver=pdfcov>

Published by the [AIP Publishing](#)

Articles you may be interested in

Erratum: “Relativistic quaternionic wave equation” [J. Math. Phys.47, 122301 (2006)]

J. Math. Phys. **55**, 059902 (2014); 10.1063/1.4878122

Comment on “A new integrable equation with cuspons and W/M-shape-peaks solitons” [J. Math. Phys.47, 112701 (2006)]

J. Math. Phys. **50**, 024101 (2009); 10.1063/1.3085748

Erratum: “Shouldn't there be an antithesis to quantization?” [J. Math. Phys.45, 3180 (2004)]

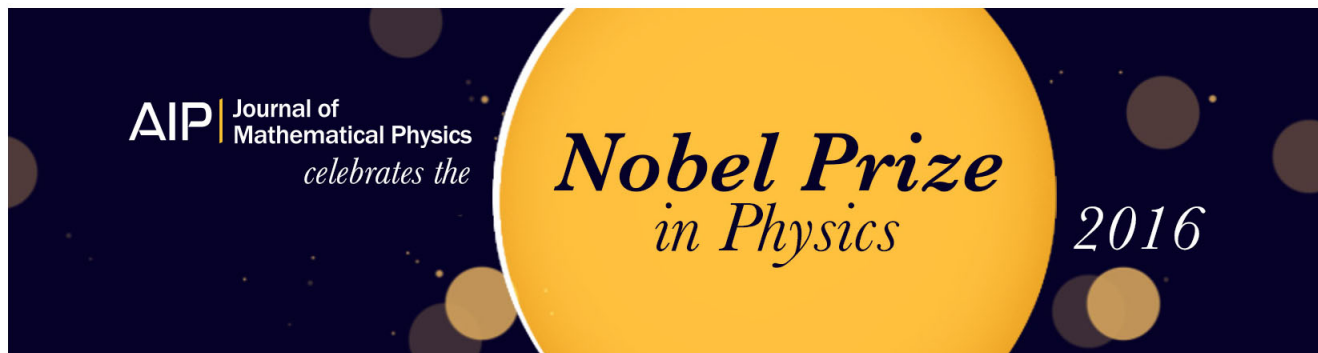
J. Math. Phys. **49**, 099902 (2008); 10.1063/1.2990397

Erratum: Polynomial Poisson Algebras for Classical Superintegrable Systems with a Third Order Integral of Motion [J. Math. Phys.48, 012902 (2007)]

J. Math. Phys. **49**, 019901 (2008); 10.1063/1.2831929

[A class of superintegrable systems of Calogero type](#)

J. Math. Phys. **47**, 093505 (2006); 10.1063/1.2345472



Erratum: “A class of superintegrable systems of Calogero type” [J. Math. Phys. **47**, 093505 (2006)]

Roman G. Smirnov^{a)}

Department of Mathematics and Statistics, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3J5

Pavel Winternitz^{b)}

Centre de Recherches Mathématiques et Département de Mathématiques et Statistique, Université de Montréal, C. P. 6128–Centre ville Montréal, QC, Canada H3C 3J7

(Received 11 May 2007; accepted 16 May 2007; published online 6 July 2007)

© 2007 American Institute of Physics.

[DOI: [10.1063/1.2749406](https://doi.org/10.1063/1.2749406)]

The first five integrals given by the formula (16) are functionally dependent in general. As a matter of fact the following syzygy holds between the first five integrals specified by (16):

$$\frac{1}{8}F_4^2 = H(F_1 - F_2) + F_1F_3.$$

However, for specific values of the function $k(\theta)$ the corresponding Hamiltonian can admit five functionally independent first integrals, and as such determine a maximally superintegrable system. An example of such a system belonging to the class defined by the generic formula (15) is the Calogero system itself. Note that in the case of the Calogero system, the fifth first integral of motion is not quadratic in the momenta, but cubic.¹ Two more examples of such systems that (a) belong to the class of superintegrable systems given by the formula (15); (b) admit five functionally independent first integrals of motion have been reported by Horwood.²

The authors wish to thank Joshua Horwood for careful reading of the paper and useful comments.

¹S. Wojciechowski, “Superintegrability of the Calogero-Moser systems,” *Phys. Lett. A* **15**, 279–281 (1983).

²J. T. Horwood (private communication).

^{a)}Electronic mail: smirnov@mathstat.dal.ca

^{b)}Electronic mail: wintern@CRM.UMontreal.CA