ERRATA

Solution and Hidden Supersymmetry of a Dirac Oscillator [Phys. Rev. Lett. 64, 1643 (1990)]

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After the publication of our paper we became aware that the Dirac oscillator was not introduced by Moshinsky and Szczepaniak as we believed but by Itô, Mori, and Carrieri in a 1967 paper.[1] We were unaware also that the solution as well as other properties and extensions of the system have been previously investigated.[2-7] We must thank Dr. A. A. Stahlhofen of Stuttgart University for calling our attention to these references.

There are errors in the eigenfunctions and in the normalization constant, as Dr. O. L. de Lange of the University of Natal has kindly pointed out to us. If we define

$$M_{\pm}=[\tfrac{1}{2}(1\pm m/E)]^{1/2},$$

the components F and G of the Dirac wave function must be written as

$$F_{nl}=M_{+}A_{nl}(\sqrt{m\omega}r)^{l+1}\exp(-m\omega r^2/2)L_n^{l+1/2}(m\omega r^2)$$

and

$$G_{n'l'}=M_{-}A_{n'l'}(\sqrt{m\omega}r)^{l'+1}\exp(-m\omega r^2/2)L_{n'}^{l'+1/2}(m\omega r^2),$$

the normalization constant is

$$A_{nl}=m\omega\epsilon^n\left[\frac{2^{l-n+2}(2n+2l+1)!!}{\pi^{1/2}n![(2l+1)!!]^2}\right]^{1/2},$$

where $n'=n-\frac{1}{2}+\epsilon/2\geq 0$, and $l'=l-\epsilon$.

Also Eqs. (18), (20), and (21) of our paper should read

$$H_S=\{Q,Q^{\dagger}\}=\{-d^2/dr^2+[\epsilon(j+\tfrac{1}{2})+m\omega r^2]^2/r^2-[m\omega-\epsilon(j+\tfrac{1}{2})/r^2]\sigma_3\}, \tag{18}$$

$$p=\frac{1}{i}\partial_r,\quad \psi=(\sigma_1+i\sigma_2)/2=\sigma^{+}, \tag{20}$$

$$U(r)=\epsilon(j+\tfrac{1}{2})\ln(r)+\tfrac{1}{2}m\omega r^2. \tag{21}$$

Finally, we must point out that A. L. Salas-Brito is affiliated with Departamento de Ciencias Básicas, Universidad Autónoma Metropolitana-Azcapotzalco.

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