Analytic representation of finite quantum systems

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Corrigendum

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Some of the formulas quoted for the case that d is an odd number should be corrected, as follows.

Equation (34) should be replaced with

$$\mathcal{N}_C(A) = \pi^{-1/2}\lambda^{-2}\cdot\left\{\Theta_3\left[\frac{A_R}{\lambda}(2\pi d)^{1/2};\frac{2\mathrm{i}d}{\lambda^2}\right]\Theta_3\left[A_I\mathrm{i}\lambda^{-1}\left(\frac{2\pi}{d}\right)^{1/2};\frac{2\mathrm{i}}{d\lambda^2}\right]\right.$$
$$\left.+\,\Theta_2\left[\frac{A_R}{\lambda}(2\pi d)^{1/2};\frac{2\mathrm{i}d}{\lambda^2}\right]\Theta_2\left[A_I\mathrm{i}\lambda^{-1}\left(\frac{2\pi}{d}\right)^{1/2};\frac{2\mathrm{i}}{d\lambda^2}\right]\right\} \tag{34}$$

where

$$\Theta_2(u;\tau) = \sum_{n=-\infty}^{\infty}\exp\left[\mathrm{i}\pi\tau\,(n+1/2)^2+\mathrm{i}2\,(n+1/2)\,u\right].$$

Equation (43) is valid for even d only. For odd d it is

$$\langle\langle A_1|A_2\rangle\rangle = \pi^{-1/2}\lambda^{-2}\mathcal{N}_C(A_1)^{-1/2}\mathcal{N}_C(A_2)^{-1/2}\exp\left(-\frac{\mathrm{i}}{2}A_{1I}A_1^*+\frac{\mathrm{i}}{2}A_{2I}A_2\right)$$
$$\times\left\{\Theta_3\left[\frac{A_1^*+A_2}{\lambda}\left(\frac{\pi d}{2}\right)^{1/2};\frac{2\mathrm{i}d}{\lambda^2}\right]\Theta_3\left[\frac{A_1^*-A_2}{\lambda}\left(\frac{\pi}{2d}\right)^{1/2};\frac{2\mathrm{i}}{d\lambda^2}\right]\right.$$
$$\left.+\,\Theta_2\left[\frac{A_1^*+A_2}{\lambda}\left(\frac{\pi d}{2}\right)^{1/2};\frac{2\mathrm{i}d}{\lambda^2}\right]\Theta_2\left[\frac{A_1^*-A_2}{\lambda}\left(\frac{\pi}{2d}\right)^{1/2};\frac{2\mathrm{i}}{d\lambda^2}\right]\right\}. \tag{43}$$

Equations (44) and (45) give the zeros and they are valid for even d only.

Equation (56) is valid for even d. For odd d it is

$$f(z,A) = \pi^{-1/2}\lambda^{-1}d^{1/2}\mathcal{N}_C(A)^{-1/2}\exp\left(\frac{\mathrm{i}}{2}A_IA\right)$$
$$\times\left\{\Theta_3\left[\frac{z+A}{\lambda}\left(\frac{\pi d}{2}\right)^{1/2};\frac{2\mathrm{i}d}{\lambda^2}\right]\Theta_3\left[\frac{z-A}{\lambda}\left(\frac{\pi}{2d}\right)^{1/2};\frac{2\mathrm{i}}{d\lambda^2}\right]\right.$$
$$\left.+\,\Theta_2\left[\frac{z+A}{\lambda}\left(\frac{\pi d}{2}\right)^{1/2};\frac{2\mathrm{i}d}{\lambda^2}\right]\Theta_2\left[\frac{z-A}{\lambda}\left(\frac{\pi}{2d}\right)^{1/2};\frac{2\mathrm{i}}{d\lambda^2}\right]\right\}. \tag{56}$$

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