Corrigendum: Accurate calculation of Green functions on the $d$-dimensional hypercubic lattice

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Y L Loh

Department of Physics and Astrophysics, University of North Dakota, Grand Forks, ND 58202, USA

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In the first line of equation (1), the Fourier integral should be over frequency, not over time:

$$G_d(t) = \int_{-\infty}^{\infty} \frac{d\omega}{2\pi} e^{-i\omega t} G_d(\omega).$$

In the derivation leading to equation (5), the second step function should be written as $\Theta(- (\omega + d - 2n))$ in order to avoid ambiguity when $\omega$ is an integer.

The text leading up to equation (6) should read ‘we have defined $K(\tau) \equiv \frac{3}{2} K_0(\tau).’ In [1] this was misprinted as ‘$2\pi’.

In equation (5), the first sum should end at $j$ and the second sum should begin at $j + 1$:

$$G_d(\omega) = \frac{1}{2^d} \int_0^\infty d\tau \left[ e^{-i\omega \tau} \sum_{n=0}^{j} \binom{d}{n} H(i\tau)^{d-n} h(i\tau)^n - e^{i\omega \tau} \sum_{n=j+1}^{d} \binom{d}{n} H(-i\tau)^{d-n} h(-i\tau)^n \right].$$

In equation (6), the first sum should end at $j$ and the second sum should end at $d - j - 1$:

$$G_d(\omega) = \frac{1}{2^d} \int_0^\infty d\tau \left[ e^{-i\omega \tau} \sum_{m=0}^{j} C_{jm} K^{d-m}(\tau) P_m(\tau) - e^{i\omega \tau} \sum_{m=0}^{d-j-1} D_{jm} K^{d-m}(\tau) P_m(\tau) \right],$$

and similarly equation (7) should read

$$C_{jm} = \sum_{n=m}^{j} \binom{d}{n} \binom{n}{m} 2^{n-d-m},$$

$$D_{jm} = \sum_{n=m}^{d-j-1} \binom{d}{n} \binom{n}{m} 2^{d+m-2n}.$$ 

It should be noted that the above sums can be evaluated in closed form using the properties of binomial coefficients.

Finally, in equation (8), the substitution $d = 3$ should be made everywhere, i.e.

$$G_3(\omega) = \frac{1}{8} \int_0^\infty d\tau \cdots.$$
Acknowledgment

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Reference

[1] Loh Y L 2011 J. Phys. A: Math. Theor. 44 275201