

**April Fool's (Special) DE Seminar:
Black body radiation in $(-1/2)$ -dimensional space and the
harmonic convergence of fundamental physical constants**

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Abstract

I shall revisit the derivation of Max Planck's radiation law (in all dimensions) and show that the energy per unit volume E of the $(-1/2)$ -dimensional photon gas can explicitly be evaluated:

$$E = -(c\hbar kT)^{1/2}\xi(1/2).$$

Here the world constants (the speed of light c , the Plank constant \hbar , the Boltzmann constant k , as well as the temperature T) are "on parade" and ξ is the complete zeta function. The role of the Riemann's functional equation relative to better understanding black body radiation will also be discussed.