Electrical Moonshine

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Abstract. The electrical constant and its Eddington approximation 137 are both 10 ppb connected with the dimension 26 of bosonic string theory and the 'moonshine entropy' ln(196883).

A bridge was established between two very different mathematical domains : the group theory and the conformal field one, which is related to the string theory [1]. The starting common point is the order of the Monster group $D = 196883$. In its treatment of the bosonic string theory, of dimension $d = 26$, Witten [2] considers the corresponding entropy $\ln D$, and compare it with the natural term 4π. But there are two 10^{-8} precise relations implying 137 and the electric constant $a \approx 137.035999138(31)$.

$$6d\ln D \approx (137/\pi)^2 \approx (a/\pi)^2 - 1$$

This confirms the physical pertinence of the Monster Group [3] and string theory, but rehabilites Eddington's approach [4].

References

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