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α' -corrected black holes in Heterotic String Theory

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I will present the first-order in α' corrections to a 3-charge black hole in Heterotic Superstring Theory with the possible addition of $SU(2)$ Yang-Mills fields. All the calculations are carried out in the 10-dimensional theory, avoiding the problems posed by the dimensional reduction or the supersymmetry completions of 5-dimensional actions. Since the solution covers the asymptotically-flat region and not just the near-horizon region, it is possible to compute the conserved charges and fundamental constituents directly. I will discuss the behaviour under α' -corrected T-duality, as well as the correction to the black hole entropy, which is in agreement with CFT computations.

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