Holography and entropy bounds in the plane wave matrix model[1]

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As a quantum theory of gravity, Matrix theory should provide a realization of the holographic principle, in the sense that a holographic theory should contain one binary degree of freedom per Planck area. We present evidence that Bekenstein's entropy bound, which is related to area differences, is manifest in the plane wave matrix model. If holography is implemented in this way, we predict crossover behavior at strong coupling when the energy exceeds N**2 in units of the mass scale.

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Date submitted: 08 Jan 2006   Electronic form version 1.4