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## On pulsating strings in NS5 and I- brane background

We investigate pulsating strings in the background of a single stack of NS5-branes as well as in an I-brane configuration, which consists of two orthogonal stacks of NS5-branes, employing the Polyakov formulation of the fundamental string action. For the I-brane setup, we utilize a symmetry that effectively decouples the dynamics of the two spheres from the flat space components. This allows us to analyze pulsating string solutions on each sphere independently and simultaneously on both spheres. We subsequently derive expressions for the energy of these pulsating strings as a function of the adiabatic invariant oscillation number under the short string limit and consider the cases when energy is equally and unequally distributed among the spheres of the I-brane. We observe that when the energy is equally distributed between the spheres, a string with equal winding numbers on both spheres pulsates simultaneously on both spheres with the same amplitude and when energy is unequally distributed, the string pulsates with larger amplitude on the sphere bearing higher energy.

## Field of contribution

Theory

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