

"A proposal for a non-abelian theory of multiple M5-branes"

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Abstract: In the first part of the talk I will discuss a recent proposal for the worldvolume action of multiple M5-branes. The action consists of a non-abelian generalization of the abelian action of Perry and Schwarz for a single five-brane. It admits a self-duality equation on the field strength as the equation of motion. It has a modified 6d Lorentz symmetry. On dimensional reduction on a circle, our action gives the standard 5d Yang-Mills action plus higher order corrections. Based on these properties, we propose that our theory describes the gauge sector of multiple M5-branes. In the second part of the talk, I will construct exact string solutions of the theory. These solutions are supported by non-abelian monopoles of the Wu-Yang or t' Hooft-Polyakov and are self-dual. We argued that these are the non-abelian self-dual string solutions living on the system of multiple M5-branes.