

Speaker: Jonathan Heckman

Title: IIB Determined

Abstract: We use the Swampland Cobordism Conjecture recently proposed by McNamara and Vafa to study the spectrum of objects in type IIB string theory. A famous feature of type IIB string theory (as well as several other quantum systems) is that it enjoys a non-abelian duality group. By computing the relevant cobordism groups, we show that the cobordism conjecture successfully reconstructs many known supersymmetric objects, and also predicts the existence of a new non-supersymmetric “reflection 7-brane,” the properties of which we describe. Time permitting, we also discuss how such 7-branes implement generalized symmetry operators in various quantum field theories engineered from string theory. Based on joint work with Debray, Dierigl, Montero and Torres.