ON THE COMPLEX COBORDISM CLASSES OF HYPER-KÄHLER MANIFOLDS

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Hyper-Kähler manifolds are symplectic holomorphic compact Kähler manifolds, a particular class of complex manifolds with trivial canonical bundle. They exist only in even complex dimension, and there are two main series of known deformation classes of hyper-Kähler manifolds, with one model in each even dimension, that I will describe. I will discuss in this introductory talk a result obtained with Georg Oberdieck and Jieao Song on the complex cobordism classes of hyper-Kähler manifolds, and present a number of open questions concerning their Chern numbers.

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