

Projective maps, branch curves and symplectic invariants

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The aim of this talk will be to explain how the topology of compact symplectic manifolds can be investigated by analogy with that of complex projective varieties, using approximately holomorphic techniques to construct maps with values in projective spaces, and in particular maps to $\mathbb{C}P^2$. Focusing on the four-dimensional case, we will introduce monodromy invariants and discuss their properties; we will then introduce a symplectic invariant related to fundamental groups of branch curve complements and discuss some applications and examples.