

‘Exotic’ symplectic manifolds via Lefschetz fibrations

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Stein manifolds are known to symplectic geometers as Liouville domains and are an especially nice class of open symplectic manifolds. I construct, in all odd complex dimensions, pairs of Liouville domains W_0 and W_1 which are diffeomorphic to the sphere cotangent bundle with one extra subcritical handle, but are not exact symplectomorphic. In fact, while W_0 is symplectically very similar to the cotangent bundle itself, W_1 is more unusual, and in particular contains no compact exact Lagrangian submanifolds. Constructions are given by explicit Lefschetz fibrations, and the proofs involve calculations of wrapped Floer homologies.

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