

Lagrangian spheres appear naturally in symplectic manifolds as vanishing cycles of Lefschetz fibrations. We will establish the uniqueness up to symplectomorphism of the Lagrangian spheres representing a fixed homotopy class in some Stein symplectic 4-manifolds. In many cases all such spheres are Hamiltonian diffeomorphic, but this is not true in general, even if a smooth isotopy class is specified.