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Symplectic surgeries from singularities

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Abstract: We describe a variety of symplectic surgeries (not a priori compatible with Kaehler structures) which are obtained by combining local Kaehler degenerations and resolutions of singularities. The effect of the surgeries is to replace configurations of Lagrangian spheres with symplectic submanifolds. We discuss several examples in detail, relating them to existence questions for symplectic manifolds with $c_1 > 0$, $c_1 = 0$, $c_1 < 0$ in four and six dimensions.