Infinitely many monotone Lagrangian Tori in $\mathbb{CP}^2$.

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Abstract:
In previous work, we constructed an exotic monotone Lagrangian torus in $\mathbb{CP}^2$ (not Hamiltonian isotopic to the known Clifford and Chekanov tori) using techniques motivated by mirror symmetry. We named it $T(1,4,25)$ because, when following a degeneration of $\mathbb{CP}^2$ to the weighted projective space $\mathbb{CP}(1,4,25)$, it degenerates to the central fiber of the moment map for the standard torus action on $\mathbb{CP}(1,4,25)$. Related to each degeneration from CP^2 to $\mathbb{CP}(a2,b2,c2)$, for (a,b,c) a Markov triple - $a2+b2+c2=3abc$ - there is a monotone Lagrangian torus, which we call $T(a2,b2,c2)$. We employ techniques from symplectic field theory to prove that no two of them are Hamiltonian isotopic to each other.