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*Homology supported in Lagrangian submanifolds in mirror quintic threefolds*

In this talk, we study homology classes in the mirror quintic Calabi-Yau threefold which can be realized by Lagrangian submanifolds. We have used Picard-Lefschetz theory to establish the monodromy action and to study the orbit of Lagrangian vanishing cycles. For many prime numbers  $p$  we can compute the orbit modulo  $p$ . We conjecture that the orbit in homology with coefficients in  $\mathbb{Z}$  can be determined by these orbits with coefficients in  $\mathbb{Z}_p$ .