SHAFAREVICH–TATE TWISTS OF LAGRANGIAN FIBRATIONS

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The talk is based on joint work in progress with Yagna Dutta and Dominique Mattei. Given a Lagrangian fibration of O'Grady 10 type constructed by Laza, Sacca and Voisin from a cubic fourfold X, we parametrize all its Shafarevich–Tate twists in terms of the middle cohomology group of X. The proof relies on the Deligne cohomology complex, and is naturally taking place in the world of Hodge modules. The same method allows us to compute the Mordell–Weil group of X thus reproving a result of Sacca.