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Transplantation and isogeny of intermediate Jacobians of Kahler manifolds

We give a general method for constructing compact Kähler manifolds X_1 and X_2 whose intermediate Jacobians $J^k(X_1)$ and $J^k(X_2)$ are isogenous for each k, and we exhibit examples. Under an additional hypothesis, the Hodge Laplacians acting on forms of type (p, q) are isospectral for all choices of (p, q). The method is based upon the algebraic transplantation formalism arising from Sunada's technique for constructing pairs of compact Riemannian manifolds whose Laplace spectra are the same.

This is joint work with Eran Makover, Bjoern Muetzel and David Webb.