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Title: A conjecture of Beauville and Catanese for compact Kahler manifolds

Abstract: Given a compact Kahler manifold X, the closed subvarieties $\Sigma^i_k(X) = \{L \in Pic^0(X) | \dim H^i(X, L) \geq k\}$, $i, k \in \mathbb{N}$ are called Green-Lazarsfeld sets. They reflect the geometry of X, and are closed related to vanishing theorems. A conjecture of Beauville and Catanese says each irreducible component of such Green-Lazarsfeld set contains a torsion point of $Pic^0(X)$. When X is a smooth projective variety, the conjecture was proved by Simpson in 1993 using arithmetic method, and recently by Schnell using more Hodge theory. We will give a sketch of the proof of Schnell, and a generalization to compact Kahler manifolds.