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Reduction of manifolds with semi-negative holomorphic sectional curvature.

The interplay of various notions of hyperbolicity and the geometry and structure of a projective manifold is an important and intriguing topic in complex geometry. In this spirit, we investigate a projective Kähler manifold M of semi-negative holomorphic sectional curvature H . We introduce a new differential geometric numerical rank invariant which measures the number of linearly independent *truly flat* directions of H in the tangent spaces. We prove that this invariant is bounded above by the nef dimension and bounded below by the numerical Kodaira dimension of M . We also prove a splitting theorem for M in terms of the nef dimension and, under some additional hypotheses, in terms of the new rank invariant. (Received July 17, 2017)