

On the Seshadri constants of adjoint line bundles

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In the present paper we are concerned with the possible values of Seshadri constants. While in general every positive rational number appears as the local Seshadri constant of some ample line bundle, we point out that for adjoint line bundles there are explicit lower bounds depending only on the dimension of the underlying variety. In the surface case, where the optimal lower bound is $1/2$, we characterize all possible values in the range between $1/2$ and 1 -- there are surprisingly few. As expected, one obtains even more restrictive results for the Seshadri constants of adjoints of very ample line bundles. Our description of the border case in this situation makes use of adjunction-theoretical results on surfaces. Finally, we study Seshadri constants of adjoint line bundles in the multi-point setting.

Comments: Added Remark 3.3, which points out an improvement to the lower bound in Theorem 3.2 by using G. Heier's result

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