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Slopes of trigonal fibred surfaces and of higher dimensional fibrations

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Abstract. We give lower bounds for the slope of higher dimensional fibrations $f\colon X \longrightarrow B$ over curves under conditions of GIT-semistability of the fibres, using a generalization of a method of Cornalba and Harris. With the same method we establish a sharp lower bound for the slope of trigonal fibrations of even genus and general Maroni invariant; this result in particular proves a conjecture due to Harris and Stankova-Frenkel.

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