

TROPICAL INDEPENDENCE AND GAUSS–WAHL MAPS

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ABSTRACT. I will discuss applications of tropical geometry to study general line bundles on general curves. As observed by Wahl, a curve may be embedded in a $K3$ surface only when a certain map, which is now known as the Wahl map, is not surjective. Similarly, the more general Gauss–Wahl map provides an intrinsic criterion for embeddability in other surfaces. In my talk, I will explain how one can obtain a lower bound for the rank of such maps by considering the Berkovich skeleton of a curve. As an example, we recover the injectivity of the Wahl map in low genus. I will then discuss ongoing work towards proving surjectivity of the more general Gauss–Wahl map in other cases. This is joint work with Dave Jensen.