Maclagan, Diane; Rincón, Felipe

Tropical schemes, tropical cycles, and valuated matroids. (English) Zbl 07174685

Summary: We show that the weights on a tropical variety can be recovered from the tropical scheme structure proposed in [GG16], so there is a well-defined Hilbert-Chow morphism from a tropical scheme to the underlying tropical cycle. For a subscheme of projective space given by a homogeneous ideal $I$ we show that the Giansiracusa tropical scheme structure contains the same information as the set of valuated matroids of the vector spaces $I_d$ for $d \geq 0$. We also give a combinatorial criterion to determine whether a given relation is in the congruence defining the tropical scheme structure.

MSC:
14T05 Tropical geometry (MSC2010)
05B35 Combinatorial aspects of matroids and geometric lattices

Keywords:
tropical scheme; valuated matroid

Software:
TropLi; Binomials.m2

Full Text: DOI

References:
[13] Speyer, D.

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.