

Nevanlinna theory for tropical hypersurfaces

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Abstract. Tropical Nevanlinna theory aims to describe the value distribution theory of piecewise continuous linear real functions or maps into tropical geometric spaces. In this paper, we mainly investigate the Nevanlinna theory for tropical hypersurfaces in tropical projective spaces. Our result on the second main theorem in tropical Nevanlinna theory generalizes and improves Korhonen-Tohge's second main theorem. The growth condition of a tropical holomorphic curve is improved to the minimal hypertype by giving an improvement of the tropical logarithmic derivative lemma. In particular for the one-dimensional tropical projective space, we obtain new versions of the second main theorem for tropical meromorphic functions, which are different from Laine-Tohge's second main theorem.

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