

## Upper level sets of Lelong numbers on Hirzebruch surfaces

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Let  $T$  be a positive closed current of bidimension  $(1, 1)$  with unit mass on a complex manifold  $X$  and  $\nu(T, x)$  denote the Lelong number of  $T$  at  $x \in X$ . It is a remarkable result of Y.T. Siu that the upper level sets

$$E_\alpha(T) := \{x \in X \mid \nu(T, x) \geq \alpha\}$$

of Lelong numbers are analytic subvarieties of  $X$  of dimension at most 1 for any  $\alpha > 0$ . In the case that  $X = \mathbb{P}^n$  it was shown that

$$E_\alpha^+(T) := \{x \in X \mid \nu(T, x) > \alpha\}$$

has certain geometric properties when  $\alpha$  is large enough. In this talk, first we will go over these results. Then we will focus on the geometry of the set of points with large Lelong numbers on Hirzebruch surfaces. This is a joint work with A.U.Özgür Kışisel. This work is supported by TÜBİTAK 3501 Proj. No. 120F084 and TÜBİTAK 2518 Proj. No. 119N642.