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**Alexander J Barrios\*** ([abarrios@carleton.edu](mailto:abarrios@carleton.edu)), Carleton College, Department of Mathematics and Statistics, One North College Street, Northfield, MN 55057. *Lower Bounds on the Modified Szpiro Ratio.*

The modified Szpiro conjecture, which is equivalent to the ABC Conjecture, states that for each  $\epsilon > 0$  there are finitely many rational elliptic curves  $E$  satisfying  $N^{6+\epsilon} < \max\{|c_4^3|, c_6^2\}$  where  $N$  is the conductor of  $E$  and  $c_4$  and  $c_6$  are the invariants associated to a minimal model of  $E$ . In this talk we will show that for a rational elliptic curve  $E$  with torsion subgroup  $E(\mathbb{Q})_{\text{tors}} \cong T$ , there is an explicit lower bound  $l_T$  on the modified Szpiro ratio which depends only on  $T$ , i.e.,  $l_T < \frac{\log \max\{|c_4^3|, c_6^2\}}{\log N}$  for all  $E/\mathbb{Q}$  with  $T \hookrightarrow E(\mathbb{Q})$ . The techniques of the proof rely on a careful analysis of the minimal models of  $E$  and Tate's algorithm. (Received September 01, 2018)