1102-14-254 **Maria Angelica Cueto*** (macueto@math.columbia.edu), Department of Mathematics, Columbia University, 2990 Broadway - MC 4403, New York, NY 10027, and **Hannah Markwig**.

Repairing tropical curves by means of linear tropical modifications. Preliminary report.

Tropical geometry is a piecewise-linear shadow of algebraic geometry that preserves important geometric invariants. Often, we can derive classical statements from these (easier) combinatorial objects. One general difficulty in this approach is that tropicalization strongly depends on the embedding of the algebraic variety. Thus, the task of finding a suitable embedding or of repairing a given "bad" embedding to obtain a nicer tropicalization that better reflects the geometry of the input curve becomes essential for many applications. In this talk, I will show how to use linear tropical modifications and Berkovich skeleta to achieve such goal.

I will focus on examples, especially of plane elliptic cubics defined over the field of Puiseux series. In the latter case, good embeddings are characterized by the classical j-invariant. Given a plane elliptic cubic whose tropicalization contains a cycle, we present an effective algorithm to linearly re-embed the curve so that its tropicalization reflects the j-invariant. I will present an elementary proof, by interpreting the initial terms of the discriminant of the cubic as products of the discriminants of all 2-cells in the induced Newton subdivision of the input plane cubic. This is joint work, in progress, with Hannah Markwig. (Received July 29, 2014)