1122-52-225 **Michael A Burr*** (burr2@clemson.edu), O-19 Martin Hall, Clemson University, Clemson, SC 29634. *An Introduction and Recent Advances on Continuous Amortization.*

Continuous amortization was recently introduced as a technique to compute the complexity of subdivision-based algorithms. This technique has been successfully applied, as a uniform technique, for computing the complexity of common root isolation algorithms. Continuous amortization can be used to compute many complexity-based quantities of subdivision-based algorithms, such as the number of subdivisions, the bit complexity, or the expected time. Moreover, the complexity resulting from continuous amortization is based on the intrinsic geometric complexity of the input instance. In practice, continuous amortization can be applied uniformly to a variety of algorithms and provides state-of-the-art results which are adaptive to the input data. In the first part of this talk, I will provide an introduction to the continuous amortization technique, illustrating its application to various subdivision-based algorithms for isolating the solutions of polynomials. In the second part of this talk, I will discuss new work on the application of continuous amortization to problems in higher dimensions. (Received August 14, 2016)