The Compensating Polar Planimeter

Abstract:
How does one measure area? As an example, how can one determine the area of a region on a map for the purpose of real estate appraisal? Wouldn’t it be great if there were an instrument that would measure the area of a region by simply tracing its boundary? It turns out that there is such an instrument: it is called a planimeter. In this talk we will discuss a particular type of planimeter called the compensating polar planimeter. There will be a little bit of history and some analysis involving line integrals and Green’s theorem. Finally, there will be a chance to see and touch actual examples of these fascinating instruments from the speaker’s collection.