1138-13-233 **William D. Taylor*** (wdtaylor@uark.edu). *New Closures Related to s-multiplicity.*

The integral closure and tight closure of ideals are extremely useful tools in commutative algebra, and have been used to solve many difficult and fascinating problems. The Hilbert-Samuel and Hilbert-Kunz multiplicities are numerical invariants of ideals intimately related to integral closure and tight closure of ideals, respectively. In this talk we will define and explore a family of closures that lie between these two classical closures and are parameterized by a real parameter. We will see how these closures arise naturally in the study of s-multiplicity, which is a family of multiplicity-like functions that interpolates between Hilbert-Samuel and Hilbert-Kunz multiplicity. We will see that these new closures are related to the s-multiplicity in precisely the same way that the two previous closures are related to the Hilbert-Samuel and Hilbert-Kunz multiplicity. We will address some of the difficulties that arise when working with this more general theory, in particular with extending certain results past the domain case. (Received February 10, 2018)