1124-13-310 **Andrew R Kustin**, **Liana M Sega** and **Adela N Vraciu*** (vraciu@math.sc.edu). *Poincare series of compressed level local Artinian rings with odd socle degree.*

A recent result of Rossi and Şega shows that if R is a compressed Artinian Gorenstein local ring with socle degree not equal to three, then the Poincaré series of all finitely generated modules over R are rational, sharing a common denominator.

We generalize this result by replacing the Gorenstein assumption by the requirement that the ring $(R, \mathfrak{m})$ is level, i.e. the socle of R is $\mathfrak{m}^s$ for some s (called the socle degree of R). We need to add the assumption that the socle degree is odd. Our method relies on the same technique used by Rossi and Şega, which is exhibiting a Golod surjective homomorphism from a complete intersection onto R. In order to ensure that this technique works in the generalized setting, we undertake a detailed study of properties of compressed level Artinian local rings. In the process we show that the concept of compressed ring, which was previously studied under the assumption that the ring contains a field, also behaves well in the absence of a field. (Received September 12, 2016)