1163-13-332 **Justin Chen*** (justin.chen@math.gatech.edu). *Towards numerical primary decomposition: Noetherian operators.* Preliminary report.

Primary decomposition is a fundamental problem in computational algebraic geometry. For reduced schemes, numerical irreducible decomposition has been fairly successful, but additional techniques are needed to capture the data in the non-reduced case. To this end, one may turn to Noetherian operators, which are polynomial differential operators that encode the multiplicity structure of an arbitrary ideal. I will discuss algorithms (implemented in Macaulay2) to compute Noetherian operators, which coupled with numerical irreducible decomposition, achieves numerical primary decomposition for unmixed ideals. (Received September 02, 2020)