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**Jonathan Montaño\*** ([jmontano@purdue.edu](mailto:jmontano@purdue.edu)), Department of Mathematics, Purdue University, 150 North University Street, West Lafayette, IN 47907. *Artin-Nagata properties, minimal multiplicities, and depth of fiber cones.*

In the last few years, several results for  $\mathfrak{m}$ -primary ideals have been shown to hold for arbitrary ideals if the Hilbert-Samuel multiplicity is replaced by the  $j$ -multiplicity. In this talk, we introduce the notion of Goto-minimal  $j$ -multiplicity for ideals of maximal analytic spread. In a Cohen-Macaulay ring, inspired by the work of S. Goto, A. Jayanthan, T. Puthenpurakal, and J. Verma, we study the interplay among this new notion, the notion of minimal  $j$ -multiplicity introduced by C. Polini and Y. Xie, and the Cohen-Macaulayness of the fiber cone of ideals satisfying certain residual assumptions. (Received August 17, 2014)