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**Crystal Hoyt, Ivan Penkov and Vera Serganova\***, Department of Mathematics, UC Berkeley, Berkeley, CA 94720.  *$sl(\infty)$ -modules arising from categorical action on the category  $\mathcal{O}$  for general linear superalgebra.*

We introduce new categories of  $sl(\infty)$ -modules which depend on the choice of a certain reductive subalgebra  $k \subset sl(\infty)$ . The simple objects of these categories are tensor modules which were previously studied, however, the choice of  $k$  provides flexibility for indecomposable objects. If we choose  $k$  to have two infinite-dimensional diagonal blocks, then a certain injective object  $K(m|n)$  realizes a categorical  $sl(\infty)$ -action on the category  $\mathcal{O}_{m|n}$  of the Lie superalgebra  $gl(m|n)$ . We conjecture that the socle filtration of  $K(m|n)$  coincides with “degree of atypicality filtration” on the category  $\mathcal{O}_{m|n}$  and give some evidence that this conjecture holds. (Received August 27, 2018)