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 \(O\) 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 \(O_{m|n}\) 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 \(O_{m|n}\) and give some evidence that this conjecture holds. (Received August 27, 2018)