Misha Gekhtman*, Department of Mathematics, University of Notre Dame, Notre Dame, IN 46530. *Plethora of cluster structures on GL(n).

According to a conjecture we formulated a few years ago, each class in the Belavin-Drinfeld classification of Poisson–Lie structures on a semisimple complex group G corresponds to a cluster structure in the ring of regular functions on G. We prove this conjecture for a large subset of Belavin-Drinfeld (BD) data of type A, which includes all the previously known examples. Namely, we subdivide all possible BD data of type A into oriented and non-oriented kinds. In the oriented case, we single out BD data satisfying a certain combinatorial condition that we call aperiodicity and prove that for any BD data of this kind there exists a regular cluster structure compatible with the corresponding Poisson-Lie bracket. (Joint work with M. Shapiro and A. Vainshtein) (Received July 10, 2019)