1106-13-1856 **Idan Eisner*** (`eisner@math.haifa.ac.il`). *Exotic cluster structures on SL_n with Belavin-Drinfeld data of minimal size.*

Cluster algebras were introduced by Fomin and Zelevinsky in 2001. They are commutative rings, with a distinguished set of generators that are grouped into overlapping finite sets of the same cardinality. Among many other examples, cluster algebras appear in coordinate rings of various algebraic varieties. Using the notion of compatibility between Poisson structures and cluster algebras, Gekhtman Shapiro and Vainshtein conjectured that for a simple complex Lie group G, there is a correspondence between Poisson - Lie structures on G and cluster structures in $\mathcal{O}(G)$. Poisson - Lie groups can be classified through the Belavin - Drinfeld classification of solutions to the classical Yang - Baxter equation. The conjecture suggests a one to one correspondence between Belavin - Drinfeld classes and cluster structures in $\mathcal{O}(G)$. It has been proved for $G = SL_n$ where $n < 6$, for the Cremmer - Gervais case in SL_n for any n, and for the standard case for any G. Given a Belavin - Drinfeld data of type $\alpha \mapsto \beta$ in SL_n, we describe an algorithm to construct a cluster structure $\mathcal{C}$ that is compatible with the corresponding Poisson bracket $\{\cdot,\cdot\}_{\alpha\beta}$ and show that the conjecture holds in this case. (Received September 15, 2014)