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**Vyacheslav Futorny, Dimitar Grantcharov\*** (grandim@uta.edu) and **Luis Enrique Ramirez**. *New irreducible singular Gelfand-Tsetlin modules of  $\mathfrak{gl}(n)$* . Preliminary report.

Every irreducible finite-dimensional module of  $\mathfrak{gl}(n)$  can be described with the aid of the classical Gelfand-Tsetlin formulas. The same formulas can be used to define a  $\mathfrak{gl}(n)$ -module structure on some infinite-dimensional modules - the so-called generic (nonsingular) Gelfand-Tsetlin modules. To study singular Gelfand-Tsetlin modules we introduce new type of tableaux, derivative Gelfand-Tsetlin tableaux. In this talk we will discuss a special type of singular Gelfand-Tsetlin  $\mathfrak{gl}(n)$ -modules - those of index 2. In particular, we obtain new tableaux basis for some irreducible Verma modules. The talk is based on a joint work with V. Futorny and L. E. Ramirez. (Received September 12, 2016)