1037-17-110 **Frantisek Marko*** (fxm13@psu.edu), The Pennsylvania State University Hazleton, 76 University Drive, Hazleton, PA 18222. *Representation theory of Schur superalgebras in positive characteristic.* Preliminary report.

We describe the present state of the representation theory of Schur superalgebras $S = S(m|n, r)$ in positive characteristic. The category of (super)modules over a general linear supergroup is a highest weight category (proved by Zubkov) but polynomial (super)modules ((super)modules over Schur superalgebras) do not form a highest weight subcategory. Actually, in positive characteristic, a Schur superalgebra $S = S(m|n, r)$ is quasi-hereditary if and only if it is semisimple. Explicit descriptions of $S(1|1, r)$ was used by Hemmer-Kujawa-Nakano to determine the representation type of all superalgebras $S(m|n, r)$. The description of highest weights λ of simple modules over S is not straightforward and was given by Brundan-Kujawa via an algorithm related to Moullineax conjecture. Highest weights λ corresponding to $(m|n)$-hook partitions appear already in characteristic zero case. In that case the corresponding simple modules D_λ were described using (super)bideterminants by Muir. We consider its $\mathbb{Z}$-form that can be used to extend part of this combinatorial description to positive characteristic case. (Received January 27, 2008)