#-Rewriting Systems in Relation to Simple Matrix Grammars

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This talk focuses on #-rewriting systems as a hybrid type of formal grammar utilising both the state control present in finite automata as well as controlled rewriting of a single nonterminal symbol, #. It deals with standard #-rewriting systems and n-linear #-rewriting systems, which use context-free and linear rewriting rules respectively. On the premise that the infinite hierarchy occurring in simple matrix grammars exists in families using right-linear, linear, and context-free rewriting rules, the talk discusses the structural and derivational similarities between the n-linear #-rewriting systems, context-free #-rewriting systems and the respective types of simple matrix grammars. Based on these similarities and the infinite hierarchy of n-right-linear#-rewriting systems, the idea of proof of the equivalence of the discussed grammar types is presented. In the final part of the talk, open questions are defined.