1139-62-570   **Sonja Petrovic*** (`sonja.petrovic@iit.edu`), 10 West 32nd street, rm 208, Chicago, IL 60616.
An invitation to algebraic statistics: a brief overview. Preliminary report.

Algebraic statistics focuses on mathematical aspects of statistical models, where algebraic, geometric and combinatorial insights can be useful to study behavior of statistical procedures. While the roots of algebraic ideas in statistics are quite old, modern algebraic statistics started two decades ago with two lines of work: construction of Markov bases for analysis of and exact tests for contingency tables and use of Gröbner bases for experimental design.

The field has expanded in both scope and tools in recent years and by now has touched upon all major topics in statistical inference. This session gives an overview of recent advances in the field, broadly defined. The goal of this talk is to introduce some of the classical problems and constructions that motivate many of the session's talks: algebra of parameter estimation, the problem of parameter identifiability, geometry of mixture models, and more. (Received February 19, 2018)