1097-15-433 **Miroslav Fiedler**, **Frank J. Hall** and **Mikhail Stroev*** (mstroev1@gsu.edu), Atlanta, GA 30303. *Dense Alternating Sign Matrices and Extensions.*

An *alternating sign matrix*, henceforth abbreviated ASM, is an $n \times n$ $(0, +1, -1)$-matrix without zero rows and columns, such that the $+1$s and -1s alternate in each row and column, beginning and ending with a $+1$. The substantial interest in ASMs in the mathematics community originated from the alternating sign matrix conjecture of Mills et al. in 1983 and has continued in several combinatorial directions. In this talk, some connections of alternating sign matrices with total unimodularity, combined matrices, and generalized complementary basic matrices are explored. In particular, it is shown that every "dense" ASM is a network matrix, and hence is totally unimodular. (Received January 27, 2014)