1163-15-566 **Shaun M Fallat*** (shaun.fallat@uregina.ca), Department of Mathematics and Statistics, University of Regina, Regina, Sask. S4S0A2, Canada. *On the ranks of submatrices of totally nonnegative matrices.*

A matrix is called totally nonnegative (TN) if all of its minors are nonnegative. Since the pioneering work of Gantmacher and Krein, it is known that the distribution of ranks among both principal and non-principal submatrices of a TN matrix depends on a number of factors, such as the relative position of the base submatrix.

In this talk, we will survey some well-known results along these lines, including, row/column inclusion and shadowing. In addition, we present a new approach by taking into account the so-called Cauchon algorithm applied to a TN matrix. (Received September 09, 2020)