1126-94-298 **Guang Gong*** (ggong@uwaterloo.ca), 200 University Avenue West, Waterloo, Ontario N2L 3G1, Canada. *Strong Cryptographic Properties of WG Transformation Filtering on de Bruijn Sequences.* Preliminary report.

In this talk, I will introduce a filtering generator for which a WG transformation is used as a filtering function over a de Bruijn sequence. For a binary de Bruijn sequence of period 2^n, each n-tuple occurs exactly once in one period of the sequence. WG transformation and WG sequences have been used in WG stream cipher, which is to filter over an linear feedback shift register sequence. We investigate the cryptographic properties of the WG transformation filtering on a de Bruijn sequence. We have found a rather surprising result on WG transformations for the ideal k-tuple distribution property, namely, there is only one decimation from the WG transformation which yields the ideal k-tuple distribution. (Received January 16, 2017)