# Assignment 6

## 1    Testing a sequence of numbers[1]

- (*50 Points*) Together with this assignment you will find a sequence of 100.000 numbers (*"Sequence.txt"*) generated with the brand new *PPP* algorithm. Your task will be to test if the algorithm passes the following tests:

    - Spectral Test. (In order to perform this test assume that the algorithm used is *MRG*32*k3a* by L'Ecuyer).
    - $\chi^2$ Test.
    - *KS* Test.

  Hint: *For the Spectral test recall that the essential difference between periodic sequences and truly random sequences, that have been truncated, is that the accuracy of truly random sequences is the same in all dimensions. Thus, for the sake of simplicity, compare the results using only two and three dimensions for the lattice.*

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[1]Main reference: D. E. Knuth, *"The Art of Computer Programming"*, Addison-Wesley Professional, 2011