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## Hi-speed Random Number Generator

*Thursday, 14 July 2011 17:00 (2 hours)*

Recently, I. Kanter et al, developed an Ultra fast random bit generator, based on a semiconductor laser, having time delayed self-feedback, which operates reliably at rate up to 300 GB/s. The method uses a high derivative of the digitized laser intensity and generates the random sequence by retaining a number of the least significant bits of the high derivative value. The generator is insensitive to laser operational parameters and eliminate the necessity for all external constraints such as incommensurate sampling rates and laser external cavity round trip time. The randomness of long bit string is verified by standard statistical tests

An improved Random Number generator is proposed by making use of Zener noise. At the same time Field programmable Gateway Array for processing the final generated random numbers instead of using the Nth and Least Synthetic Bits (LSBS). All the output from the FPGA will be transferred through USB cable into a connected PC where the random number is interpreted.

**Level (Hons, MSc, &nbsp; PhD, other)?**

MSc

**Consider for a student &nbsp; award (Yes / No)?**

Yes

**Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?**

Yes

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**Session Classification:** Poster2

**Track Classification:** Track C - Lasers, Optics and Spectroscopy