

Ultrafast quantum random number generator

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Description

UVIGO and ICFO have jointly developed a novel system for the random generation of numbers exploiting an elementary quantum optics process. This physical random number generator is based on the quantum random phase noise of a single-mode laser, which is transformed in random amplitude pulses and subsequently detected using a fast photodiode.

Innovative aspects and advantages

In comparison with current random number generators:

- Generation of numbers at a very high bit rate in the order of Gb/s.
- Creates truly-random numbers
- Decrease the coherence time
- Avoids the use of phase modulators.

Commercial applications and Potential users

This invention has direct application in cryptography, gaming and lottery industry. Industrial partners are being sought to collaborate through a patent license agreement.

Patent status

US, CH and ES applications

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