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Design and testing of photon-based hardware random number generator

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Hardware random number generators (HRNG) are widely used in the computer world for security purposes as well as in the science world as a source of the high-quality randomness for the models and simulations. Currently existing HRNG are either costly or very slow and of questionable quality. This work proposes a simple design of the HRNG based on the low-number photon absorption by a detector (a photo-multiplier tube of a silicon-based one i.e. SiPM, MPPC, etc.) that can provide a large volume of high-quality random numbers. The prototype design, different options of processing and the testing of quality of the generator output are presented.

Alternate track

1. Computing, AI and Data Handling

I read the instructions above

Yes

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