

Random Number Generation on GPUs

TBA¹

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When a developer needs a lot of random numbers, he/she looks for support in the used language and uses it with default settings - after "seeding" it of course, which was mentioned somewhere. Ask any developer the difference between a real, pseudo and quasi random number and you get a blank face with a few exceptions.

In this talk we discuss what random numbers are, what are the differences between popular generators like XORWOW, Mersenne Twister, Philox and Sobol, and how we created and optimized AMD's RNG GPU library. As we worked with both Nvidia and AMD GPUs, we'll also explain some key differences we encountered while developing the library.

The goal of this talk is that you never look the same at a random number again and get insights in how modern AMD GPUs compare to Nvidia GPUs.