Subject: Re: Generate Same Sequence of Random Numbers in IDL and C
Posted by Michael Galloy on Mon, 21 Jul 2014 17:16:59 GMT
View Forum Message <> Reply to Message

On 7/21/14, 10:11 AM, sweiss1993@gmail.com wrote:
> I am in the process of developing a C version of a program originally
> written in IDL. The programs generate arrays with random number
> generators. I use gsl_rng_uniform and gsl_ran_poisson in the C
> version, and both random number generators use the gsl_rng_mt19937
> algorithm. From attempting to read GDL's source code, I noticed GDL
> happens to use the same functions.
>
> I would like to compare the two versions of the program by running
> them with the same fixed sequence of random numbers. The rng parts of
> the programs are in a loop, so a new array is generated with each
> iteration. I would like a different set of random numbers for each
> iteration. So, each iteration has a different set of generated
> numbers, but the i-th iteration in the programs should match each
> other.
>
> I could not figure out exactly how GDL sets the seed by reading the
> source code. Would someone be so kind as to show me how to seed the
> rng functions in IDL and C such that the above conditions are met?
> Thanks!
>

In IDL, you specify the seed when calling the random number generator
function, i.e.,

   IDL> r = randomu(seed, 1000)

generates 1000 uniformly distributed random numbers. If "seed" is
undefined, it is created from the system clock. I haven't used GSL
random numbers, but it looks like this is how to set the seed for them:

   void gsl_rng_set(const gsl_rng *r, unsigned long int seed);

Mike
--
Michael Galloy
www.michaelgalloy.com
Modern IDL: A Guide to IDL Programming (http://modernidl.idldev.com)
Research Mathematician
Tech-X Corporation