# GammaLib - Action #262

Feature # 226 (Closed): Parallelize maximum likelihood computation

## Create test program for code parallelization

07/02/2012 12:08 PM - Knödlseder Jürgen

| | | | |
|---|---|---|---|
| **Status:** | Closed | **Start date:** | 06/16/2012 |
| **Priority:** | Normal | **Due date:** | |
| **Assigned To:** | | **% Done:** | 100% |
| **Category:** | | **Estimated time:** | 35.00 hours |
| **Target version:** | Stage Jean-Baptiste Cayrou | | |

**Description**

Code parallelization should be tested first by a standalone test program. This program should be written in C++, elaborating the best possible implementation of code parallelization. It should be checked whether one can generate a generic C++ class that handles code parallelization.

The test program needs to include a Python interface, so that we can test also code parallelization from within Python (verifying that the GIL does not pose any problem).

Note that we can have several test programs to test several strategies.

**Related issues:**

| | | |
|---|---|---|
| Blocks GammaLib - Action # 263: Validate the test program | **Closed** | **06/16/2012** |

### History

**#1 - 07/02/2012 12:11 PM - Knödlseder Jürgen**

*- Description updated*

*- Estimated time set to 70.00*

*- Remaining (hours) set to 70.0*

**#2 - 07/02/2012 12:13 PM - Knödlseder Jürgen**

*- Estimated time changed from 70.00 to 35.00*

*- Remaining (hours) changed from 70.0 to 35.0*

**#3 - 07/03/2012 08:37 AM - Anonymous**

*- Status changed from New to In Progress*

**#4 - 07/05/2012 04:33 PM - Anonymous**

*- Status changed from In Progress to Resolved*

**#5 - 07/05/2012 05:12 PM - Anonymous**

*- % Done changed from 0 to 100*

I tested OpenMP with some code :

```
#pragma omp for
for(int i=0;i<m_nb_iter;i++)
{
  for(int j=0;i<NB_ITERATIONS_WAIT;i++); // A loop to simulate calculation time
  #pragma omp atomic
  m_value++
}
```

I create a python module to test if the multi-threading works with the GIL and it works well.

*Without OpenMP : 9 sec*
*With OpenMP : < 1 sec*

To disable it do not write the option "-fopenmp"

To set the number of thread : set the environement variable OMP_NUM_THREADS

**#6 - 07/10/2012 03:54 PM - Anonymous**

*- Status changed from Resolved to Closed*

*- Remaining (hours) changed from 35.0 to 0.0*

**#7 - 07/28/2012 12:53 AM - Knödlseder Jürgen**

*- Target version deleted (Stage Jean-Baptiste Cayrou)*

**#8 - 07/28/2012 12:53 AM - Knödlseder Jürgen**

*- Target version set to Stage Jean-Baptiste Cayrou*