



Feb. 28-March 6, 2010

CCT to Host Llama 2010 Workshop for Numerical Relativity Research March 8-10

LSU's numerical relativity group will host a workshop March 8-10 at CCT, giving University faculty and research staff an opportunity to collaborate with international partners and work toward improving a computer code the group developed to study black hole systems.

When a black hole develops close to another black hole, or when a black hole passes close enough to another black hole, they can form a single system, called a Black Hole Binary. When this happens, the two black holes spiral around each other, moving closer and faster until they finally merge and become a single black hole, sending ripples of gravitational waves across the universe. These mergers are one of the phenomena studied in LSU's numerical relativity group.

The numerical relativity group at LSU is partnered with a similar research group at the Albert Einstein Institute in Germany, and the two groups periodically hold workshops to give researchers from both institutions time to work together in one location on particular aspects of their projects. Recently, members of numerical relativity research groups at Caltech and Universitat de les Illes Balears in Palma, Spain also have become collaborators.

In this particular workshop, researchers will improve the accuracy and precision of Llama, a computer code the group developed and uses to perform simulations of binary black hole systems. Members of the LSU and Albert Einstein Institute numerical relativity research groups created the Llama code in 2008, and the group has used it for research since early 2009.

Llama uses Cactus, an open-source software framework the Albert Einstein Institute numerical relativity group developed that has been supporting research in astrophysics and other areas for more than 10 years. To date, Llama is one of the most accurate codes used to study binary black holes. The workshop participants expect that the improvements made during this workshop will make Llama more efficient for a series of planned calculations to help identify and detect gravitational waves emitted in binary black hole systems.

Erik Schnetter, a researcher with CCT and the LSU Department of Physics & Astronomy, organized the Llama 2010 workshop together with Ian Hinder from the Albert Einstein Institute. Participants from LSU and the three collaborating sites, Caltech, Universitat de

les Illes Balears and Albert Einstein institute, will attend the workshop.

The Llama code improvements as well as other relativistic astrophysics research projects the groups are conducting have received grant funding from several sources. Schnetter and CCT and LSU Department of Computer Science Professor Gabrielle Allen received \$2 million from the National Science Foundation through four different grant awards to address this and other challenges in astrophysics in a comprehensive manner.

The Llama 2010 workshop applies to these research projects, and is partly funded by these grants and by CCT's Coast to Cosmos Focus Area.

Pats on the Back:

- Jorge Pullin, Ph.D., received a \$35,000 grant from the National Science Foundation, which will be administered through LSU to provide travel support for U.S. scientists to attend the 19th International Conference on General Relativity and Gravitation (GR19), which will take place in Mexico City July 5-9, 2010. This conference happens every three years, and is the premiere international conference for researchers working in numerical relativity, astrophysics and related areas.

Lectures This Week:

- The Computational Mathematics Seminar Series presents "Optimally Adapted Finite Element Meshes" by Jean-Marie Mirebeau, Universite Pierre Et Marie Curie, France, this Wednesday, March 3, at 3:40 p.m. in Lockett Hall Room 233.

Please Note:

- CCT announces The CCT Distinguished Graduate Dissertation Fellowship program to support outstanding graduate students at the University as they complete their final year towards a terminal degree in their field.

Eligible students:

- Must be working with a faculty member associated with CCT
- Minimum GPA of 3.50
- Must have already passed all of the required exams in their department
- Must have finished all required course work and be working on the final dissertation
- Must devote full time to the completion of the dissertation preparation
- Must be enrolled in dissertation credit for nine hours during Fall and Spring semesters
- Cannot have other employment! Students cannot hold another graduate fellowship or award

Students in this program will receive a \$22,000 stipend for the 2010-2011 academic year. The deadline to apply for the fellowship this year is March 25. To apply, interested students should submit a description of the work in progress, a list of their publications, presentations, honors and awards, a copy of their transcript, and a

statement outlining the timetable for completing their dissertations within the year. The student also should arrange that three letters of recommendation be sent directly to the Fellowships Committee. The application packet and letters of recommendation (in pdf format) should be sent to: jobs@cct.lsu.edu

- LSU CCT and the Louisiana Biomedical Research Network (LBRN), will host the 3rd Workshop on Computational Biology March 26-27, 2010 at LSU. This workshop will bring together researchers using computational approaches in the biological sciences, HPC providers and cyberinfrastructure developers. For a full schedule and to register, visit: <http://lbrn.lsu.edu/urls/cw2010>. If you have any questions, please contact Ms. Dung Pham, dpham3@lsu.edu. **Deadline for registration is this Friday, March 5, 2010.**
- LSU's Department of Physics & Astronomy and CCT will host an afternoon of free, family friendly activities on Saturday, March 27, at the [Highland Road Park Observatory](#), 13800 Highland Road, from 2 p.m. to 6 p.m. as part of [NanoDays](#), a national event of educational programs about nanoscale science and engineering coordinated through the [Nanoscale Informal Science Education Network](#). [NanoDays](#) will feature several hands-on activities for children of all ages, and two prominent nanoscience researchers will speak about their work. At 3 p.m., [Kristen Buchanan, Ph.D., of Colorado State University](#), will talk about "Nanomagnetism" and its application to hard drives. At 4 p.m. [Jayne Garno, Ph.D., of LSU](#), will present "Nano Theater," showing images of nano-objects captured in her lab. For more information, contact Juana Moreno at Moreno@lsu.edu, or visit <http://www.cct.lsu.edu/LSUNanoday>.
- HPC's next training is an Introduction to MPI on Thursday, March 4, from 1:30 to 3:30 pm in 307 Frey and on the access grid. To register, visit: <http://www.hpc.lsu.edu/training/tutorials/#spring10mpi>. To see upcoming training and workshops, visit: <http://www.hpc.lsu.edu/training/>
- The next LONI HPC workshop will be hosted by UNO March 29 - 30 at UNO. For more information, visit <http://www.hpc.lsu.edu/training>. LSU's LONI HPC workshop has been rescheduled for April 26 - 28.
- CCT, AVATAR Initiative and the Red Stick International Animation Festival are hosting LSU Get Animated! Summer Camp, June 7-11, at the Shaw Center for the Arts in downtown Baton Rouge. The camp is currently taking applications, so please pass on the word to any Baton Rouge-area high school students with whom you work. Students can visit <http://www.cct.lsu.edu/animate> for more details and to get the necessary materials to register.
- Please remember to send your news concerning grants, awards, conferences, or other pertinent information to PR Manager Kristen Sunde at ksunde@cct.lsu.edu.

- Follow CCT with social media to access photos and see news, events or updated information. Both these pages are public; you do not need a Facebook or Twitter account to view the information.

[Facebook group](#): LSU Center for Computation & Technology
[Twitter @LSUCCT](#)

Upcoming Grant Deadlines:

- [Proactive Recruitment in Introductory Science and Mathematics \(PRISM\)](#)
March 08 2010 10:15 am
At Most \$ 600,000.00 available
- [Integrative Graduate Education and Research Traineeship Program \(IGERT\)](#)
March 29 2010 10:15 am
At Most \$ 3,000,000.00 available
- [Strategic Technologies for CyberInfrastructure \(STCI\)](#)
April 21 2010 10:15 am
- [Future Internet Architectures \(FIA\)](#)
April 22 2010 10:15 am
At Most \$ 9,000,000.00 available
- [2010 NSF MRI](#)
April 21, 2010 5 p.m.

Note: Please see the [CCT deadline Web site](#), as many NSF deadlines are listed here.