

For immediate release
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ORION helps transmit first results from Large Hadron Collider

TORONTO – Ontario researchers, processing multiple terabytes of raw data from the Large Hadron Collider (LHC) experiment transmitted over ORION and other advanced networks, report new world records in the search for new particles.

University of Toronto (U of T) physicists, along with their 3,000 ATLAS project colleagues, announced the first findings from the LHC at CERN in Switzerland, which confirm the Standard Model of physics is working as expected. This allows the LHC to move on to its ultimate goal of finding the Higgs Boson particle, a.k.a. “the God particle”.

These first results and large data sets are being transmitted to researchers around the world, including U of T researchers, over ORION, CANARIE and the global grid of advanced research networks.

The amount of data received and processed at the University of Toronto’s Tier 2 site recently peaked at 50 and 60 terabytes a month, a volume expected to increase well beyond that level in the weeks ahead, says Prof. Pierre Savard, Associate Professor and TRIUMF Scientist, Experimental Particle Physics and member of the U of T team participating in the research.

“This is truly exciting research, and our participation would simply not be possible without access to ORION and the other advanced networks,” says Prof. Savard. “We all rely on this critical infrastructure supporting science and research in Ontario. It allows us to participate and play a leadership role in global scientific collaborations.”

“This is a wonderful example of the kind of scientific and research leadership and collaboration that Ontario can be proud of,” says ORION President and CEO Dr. Darin Graham. “It’s essential to have the enabling critical infrastructure, like ORION and CANARIE, to ensure Ontario remains a dynamic player in the global innovation landscape,” he said.

The infrastructure that makes the collaboration possible are the high-capacity optical networks linking the primary site at CERN in Switzerland to various Tier 1 and Tier 2 sites around the world, including TRIUMF (Canada’s ATLAS facility in British Columbia), the U of T team and several other Canadian universities over advanced network connections via CANARIE and ORION. The U of T also connects to ORION via GTAnet.

The research team is also making use of the U of T’s powerful SciNet supercomputing facility in analyzing the huge volume of data flooding in from CERN.

U of T faculty members have assisted in designing, building and operating the facility in Switzerland. Prof. Savard, recognized internationally for being at the center of discoveries in exotic physics, and his students took leadership roles in the most recent results. He is currently spending two weeks per month coordinating scientific activities at the facility.

Scientists will get an opportunity to learn more about the first results of the LHC later this month when the U of T hosts the 2010 international Hadron Collider Physics Symposium.

Learn more about the ATLAS project at <http://atlas.web.cern.ch/Atlas/Collaboration/>. For more about the Symposium, visit <http://hcp2010.physics.utoronto.ca/>.

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About ORION

Hundreds of times faster than the Internet, ORION is Ontario's ultra-high-speed research and education network. Established as a not-for-profit corporation in 2001, ORION links 1.7 million Ontario researchers, scientists, students, teachers and staff who depend on ORION for teaching and learning and to enable their research collaborations and discoveries in physics, cancer research, environmental science and technologies, social sciences and the humanities and multiple other disciplines. It connects users and institutions to each other, and through CANARIE - Canada's advanced research and innovation network - to high-capacity research and education networks, partners and collaborators across Canada and around the world. Visit www.orion.on.ca.

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Media Contact:

Tamara Stoll

Communications Officer

(416) 507-9860 ext. 224

tamara.stoll@orion.on.ca