



Experimental High Energy Physics at the University of Toronto

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High-energy physics research today is the culmination of centuries of searching for an understanding of the ultimate nature of matter. Over the last 30 years, the standard model of particle physics has gradually taken shape, and it has successfully withstood tests of unprecedented precision. Still, we know that this model cannot be complete. The University of Toronto has one of Canada's most active groups in elementary particle physics and relativity. Experimentalists and theorists at the University of Toronto are actively trying to find ways to move beyond the current particle physics paradigm. We have a number of exciting research positions available to graduate students starting in September 2007 and for undergraduate students from May-August 2007.



Opportunities for Graduate Studies

Ongoing experimental programs, in association with the Canadian Institute of Particle Physics (IPP), include the CDF experiment at Fermilab near Chicago, studying the highest energy proton-antiproton collisions, and the ZEUS experiment, at DESY, Hamburg, which studies high energy electron-proton interactions. CDF and ZEUS are two of the few experiments collecting data at the energy frontier until the Large Hadron Collider (LHC) comes into operation at CERN in 2007. The experimental group plays a leading role in the ATLAS collaboration, which is constructing a general-purpose LHC detector in Geneva, Switzerland. The main aim of this research is to discover the Higgs Boson that is thought to give particles their masses, and to uncover new physics, such as Supersymmetry or Extra Dimensions. Toronto is also a member of the Canadian group taking on major design and construction responsibilities for a new long-baseline neutrino oscillation experiment, T2K, in Japan, scheduled to begin data-taking in 2009.

For more information on high energy physics at the University of Toronto see:

<http://hep.physics.utoronto.ca/>

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Applications to the graduate programme for the coming year are due January 31, 2007.