**New Subatomic Particle Discovered**

A new subatomic particle has just been discovered by the CLEO elementary particle physics experiment, a collaboration of 150 physicists from sixteen North American Universities. The collaboration, of which the Purdue Elementary Particle Physics group is a leading member, is based at Cornell University’s particle accelerator the Electron Storage Ring CESR. At CESR counter-rotating beams of electrons and positrons (the anti-matter counterpart of the electron) collide and annihilate producing quarks, which are one of the fundamental building blocks of all matter. The collaboration has announced the discovery of a new subatomic particle dubbed the $D_{sJ}(2463)$ pronounced: "D sub sJ 2463". This particle, and another, the $D^{*}_{sJ}(2317)$, discovered in April by the BaBar experiment at the Stanford Linear Accelerator Center, and confirmed by CLEO in the same announcement, were completely unexpected. A proton is made of two up quarks and a down quark. The new particles, which have masses about 2.5 times the mass of a proton, are believed to consist of a quark atom in which a heavy charm quark and a lighter anti-strange quark are rotating about one another held together by the strong nuclear force.

The co-Spokespersons of the CLEO Collaboration are Purdue Professor Ian Shipsey and Cornell Professor David Cassel. Other collaboration members include Purdue Professors David Miller (a former CLEO co-spokesperson) and Edward Shibata, post doctoral research associates Guangshun Huang and Victor Pavlunin, and graduate student Batbold Sanghi. Shipsey said: The discoveries can be understood in terms of Heavy Quark Effective Theory (HQET) which was developed in the early nineties to describe the behavior of quark anti-quark systems where one quark is much heavier than the other, in combination with a postulated fundamental symmetry in nature between subatomic particles containing heavy quarks called chiral or left-right symmetry. The CLEO observation provides compelling evidence that this symmetry exists, and is a further significant step in understanding and unlocking the secrets of the subatomic world. The discovery created great interest at two recent international conferences in New York and Paris and a paper describing the results has been submitted to the prestigious journal Physical Review D. A pre-publication version of the paper may be found at (http://arxiv.org/abs/hep-ex/0305100).