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[\[International Cooperation\]\[Physics\] Taiwan Research Team Participated in CERN's LHC Atom Smasher Experiment](#)

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China Times E-paper, The Liberty Times, China Post (2010/03/31), Now News (2010/03/30) & China Post (2010/03/20) The world's largest atom smasher threw together minuscule particles racing at unheard of speeds in conditions simulating those just after the Big Bang — a success that kick-started a megabillion-dollar experiment that could one day explain how the universe began. Scientists cheered Tuesday's historic crash of two proton beams, which produced three times more energy than researchers had created before and marked a milestone for the \$10 billion Large Hadron Collider. Sponsored by National Science Council, researchers from Academia Sinica, National Taiwan University and National Central University joined CERN's LHC experiments (the European Organization for Nuclear Research's Large Hadron Collider).

Professor Y.H. CHANG of the Department of Physics, NCU, told the press that LHC is the largest scientific equipment in the history. Its accelerator itself contains about eight thousand variously-sized superconducting magnets. It is a big sci-tech challenge to lift the proton beam's speed to the 0.99999997 times of light speed and to make the protons steadily orbiting in a 17-mile (27-kilometer) tunnel for hundreds of millions times, altogether.

Two beams of protons were sent hurtling in opposite directions toward each other. CERN used powerful superconducting magnets to force the two beams (the energy of each beam has been lifted to 3.5 trillion electron volts) to cross; two of the protons collided, producing 7 trillion electron volts, simulating the environment just after the Big Bang. The team planned to find better understanding of the “God's atom”, Higgs, and the “dark matter” to resolve the mystery of the beginning of the universe.

Taiwanese researchers from Academia Sinica, National Taiwan University and National Central University have begun to take parts in the event since 2000 under the support of National Science Council. These Taiwanese researchers played significant role in the hardware construction and the data analysis. Tier 1 Center, the grid-based computing center processing the data from the smashing, is built by National Science Council and Academia Sinica. Its outstanding performance is found very plausible by the other teams of various countries all over the world.

Further Information:

[China Times E-paper 2010/03/31](#) (Chinese)

[The Liberty Times 2010/03/31](#) (Chinese)

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