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French Investigate Scientist in Formal Terrorism Inquiry

By DENNIS OVERBYE

A French court placed a physicist working at CERN, the high-energy research laboratory in Switzerland, under formal investigation on Monday for suspected "conspiracy with a terrorist enterprise."

Although the physicist's name had not been officially released by the French police, an official with direct knowledge of the investigation identified him as Adlène Hicheur, a French particle physicist born in Algeria. The official spoke on condition of anonymity.

Dr. Hicheur, 32, and a younger brother were arrested on Thursday in his home in Vienne, France, on suspicion of having contacts with a member of Al Qaeda in the Islamic Maghreb, a Sunni extremist group based in Algeria that has affiliated itself with Osama bin Laden's terrorist network. The brother has been released.

Dr. Hicheur has not been charged with a crime, and the French authorities have not said what evidence they have in the case. A person informed of the investigation said that some incriminating information was in the form of e-mail messages and other communications obtained at the time of Dr. Hicheur's arrest.

Under French law, a person in a terrorism case can be held under "provisional detention" with no time limit. In France, being placed under formal investigation does not necessarily lead to a trial and does not imply guilt.

In an interview with the journal Nature, published online on Tuesday, a brother of Dr. Hicheur said the accusations against his brother were "completely false." The brother, Halim, said that his family traded e-mail messages with people in Algeria, but denied any contacts with Al Qaeda. According to news reports, Dr. Hicheur was born in Setif, Algeria, and is one of six children.

Dr. Hicheur is part of a 49-member team from the Laboratory for High Energy Physics at the École Polytechnique Fédérale de Lausanne that is working on one experiment at CERN's Large Hadron Collider, as part of a 700-member international group.

The collider was built to accelerate protons to seven trillion electron volts of energy and then bang them together in search of forces and particles that existed in the early moments of the Big Bang.

The experiment the Lausanne team works on, called LHCb, is aimed at clarifying any difference between matter and its opposite, antimatter, and in that way explaining why the universe is made of the former and not the latter.

A spokesman for the technical school in Lausanne characterized Dr. Hicheur's colleagues as being "extremely surprised and in emotional shock" at the possibility that he was a suspect. Dr. Hicheur spent most of his time at his office at CERN, the spokesman said, returning to Lausanne only once a week to teach a class — exactly what class, he said he was not allowed to say.

Dr. Hicheur has been working on various aspects of the antimatter problem for his entire career. A paper

presented last year in La Thuile, Italy, was about so-called new physics that could emerge from the LHCb collaboration's gigantic detector, one of four spaced around the collider tunnel underneath the Swiss-French border near Geneva.

Dr. Hicheur was awarded his Ph.D. in 2003 from the University of Savoie in Annecy, France, for work on aspects of the antimatter problem involving rare decays of the subatomic particles called B mesons. The research was done at the Stanford Linear Collider in California, where he worked for several months in 2002 as part of the BaBar collaboration, said Rob Brown, a spokesman for the Stanford lab.

According to archival physics Web sites, Dr. Hicheur is listed as an author on more than a hundred physics papers, most with the BaBar team. According to British press reports Dr. Hicheur also once worked at the Rutherford Appleton Laboratory at Chilton, in Oxfordshire, England.

As a member of the LHCb team, Dr. Hicheur had an office and an e-mail address at the CERN complex outside Geneva, but according to James Gillies, head of CERN's press office, he did not have access to the tunnel.

Asked if radiation from the proton beams could be used to create radioactive materials for a dirty bomb, Dr. Gillies said it was unlikely. The isotopes produced would be too short-lived to be of use to terrorists, he said, or would be produced in quantities too small for a weapon.

"If someone were to try and introduce something into the tunnel, it would be impossible to expose it directly to the beam, so the flux of particles hitting it would be low," he said. "There is no conceivable way to produce harmful radioactive materials that could be of interest to terrorists."

In principle, antimatter could be used to make a powerful bomb, because particles and their antiparticles annihilate each other into pure energy on contact. This was the premise of the recent movie and book by Dan Brown, "Angels and Demons," as well as a propulsion scheme in "Star Trek."

CERN has in fact produced antimatter, and even anti-atoms in the quest to understand antimatter, but the lab produces so little, according to a calculation on the CERN Web site, that it would take two billion years to make enough for a bomb.