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INSTITUTIONS PRIME MINISTER RENZI VISITS CERN

On 7 July, Italian Prime Minister Matteo Renzi visited CERN, in Geneva. Renzi, accompanied by Stefania Giannini, Minister of Instruction, University and Research, was welcomed by Rolf Heuer, Director General of CERN, together with Fabiola Gianotti, designated Director, Sergio

Bertolucci, Director for Research and Computing, and the Nobel Prize Carlo Rubbia. The Prime Minister visited the ATLAS experiment and the LHC tunnel and met the Italian physicists working on the accelerator and various experiments. In his speech, he stressed the importance of research at CERN and of the work of Italian scientists and Italian industry, which has developed cutting-edge technologies to create such powerful and sophisticated machines. The presence of one of Italy's highest offices of state in the largest particle physics laboratory in the world is recognition of the excellence of CERN and of Italy's contribution. The resumption of activities at LHC RUN2, upgraded after consolidation works, promises a truly inspiring future for high-energy physics, allowing such excellence in science and technology to continue.



RESEARCH PENTAQUARKS OBSERVED

LHCb, one of the four major experiments at the LHC Large Hadron Collider, CERN's supercollider in Geneva, reported the discovery of a class of exotic particles composed of five quarks, known as pentaquarks. The

pentaquark that was observed is not simply a new particle but a new way in which quarks, which are the fundamental constituents of protons and neutrons, can combine with each other, and follows a pattern never observed before in over fifty years of experimental research. The result of the LHCb experiment is founded on extremely accurate and rigorous data analysis, based on very high-level statistics never achieved before, as well as on the extremely high accuracy of the detector. This result is not conclusive, as pentaquarks are a class of particles that can open the door to a much deeper understanding of matter. The next step will be to study how quarks are bounded within the pentaquarks. Further studies will therefore be needed, and the new data that LHCb will collect during LHC RUN2 will allow progress to be made in this field.