Revolutionary tools

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View of the CMS experiment of the LHC credit : CERN

In the darkness of their underground laboratories, under the sea or in space, scientists invent new instruments, increase the sensitivity of their detectors, and break through the background noise to probe matter and the Universe, the infinitely small or the infinitely large.Â Â

International Space Station Credit : Nasa/Ciel et Espace

Understanding matter requires the discovery of its fundamental structure, the rules of assembly of its different components, in particular by breaking them. Physicists then observe phenomena resulting from collisions of high-speed accelerated particles. At CERN, the LHC with its 27 kilometre circumference is the latest jewel of particle accelerators. It will accelerate protons at 99, 9999991% of the speed of light, which will go around the accelerator 11,245 times per second. Experiments done in the heart of this ring will probe matter looking for Higgsâ€™s boson, for antimatter and dark matter, some of the greatest puzzles faced by scientists today.