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A SMALLER, BUT STILL SUPER, COLLIDER

FOLLOWING MONTHS OF financial haggling, the European Center for Particle Physics, better known as CERN, handed the world's physics community a welcome present last month: CERN's governing council voted to approve construction of a superconducting supercollider that will rival the power of the \$11 billion SSC killed by the U.S. Congress in 1993.

To hold down costs to \$2 billion, CERN's Large Hadron Collider (LHC) will be

only a third the size of the SSC's 57-mile-long ring. But thanks to stronger magnets, the LHC will be 80% as powerful—smashing subatomic particles together with enough force, CERN predicts, to untangle most enigmas surrounding the existence of matter. And the next generation of colliders may be considerably smaller and cheaper, yet more powerful. Chan J. Joshi, an electrical engineering professor at the University of California at Los

Angeles, is working on a laser technique that can accelerate particles to the necessary velocities 50 times faster than magnets can. Joshi says his laser accelerator won't be ready for 15 or 20 years.

Meantime, the LHC could be built in as little as 10 years. It'll take a bit longer if CERN's 19 member countries have to foot the whole bill. But there has already been talk in Washington of chipping in \$400 million of the cost to assure that U.S. scientists get in on the ground floor.

ILLUSTRATIONS BY LINDA BLECK