



Levitation, Superconductivity, and the World's Largest Magnets

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At the National High Magnetic Field Laboratory (NHMFL) in Los Alamos, the world's most powerful electromagnets, more than a million times stronger than the Earth's magnetic field, are developed for use in basic research experiments. These electromagnets are powered by a 1.4 Billion-watt generator, the largest electrical generator in the United States, which delivers the energy equivalent of dozens of sticks of dynamite to the magnet during a magnet pulse. New materials are necessary to build the electromagnets because ordinary steel would burst under the stresses involved in confining the high magnetic field inside the magnet.

Researchers worldwide visit the NHMFL at Los Alamos to perform experiments on a wide range of materials, including high temperature superconductors. This talk will include a number of hands-on demonstrations on the interplay between electricity and magnetism, including using high-temperature superconductors to demonstrate magnetic levitation.