

SUPERCONDUCTIVITY at room temperature, dream or reality ?

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Superconductors can drive electricity on long distances without any loss, make magnets levitate by the high-powered magnetic field generated.



What is necessary to know

Superconductivity was discovered in 1911



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To shorten ,
it is due to a transition phase which appears below a certain "critical"
temperature and annihilates the resistance of the material.

Superconductivity at room temperature was made possible in 2013 for a few picoseconds !

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How was it realized?

Mixed barium oxide + Cooper + Yttrium + Impulses laser IR



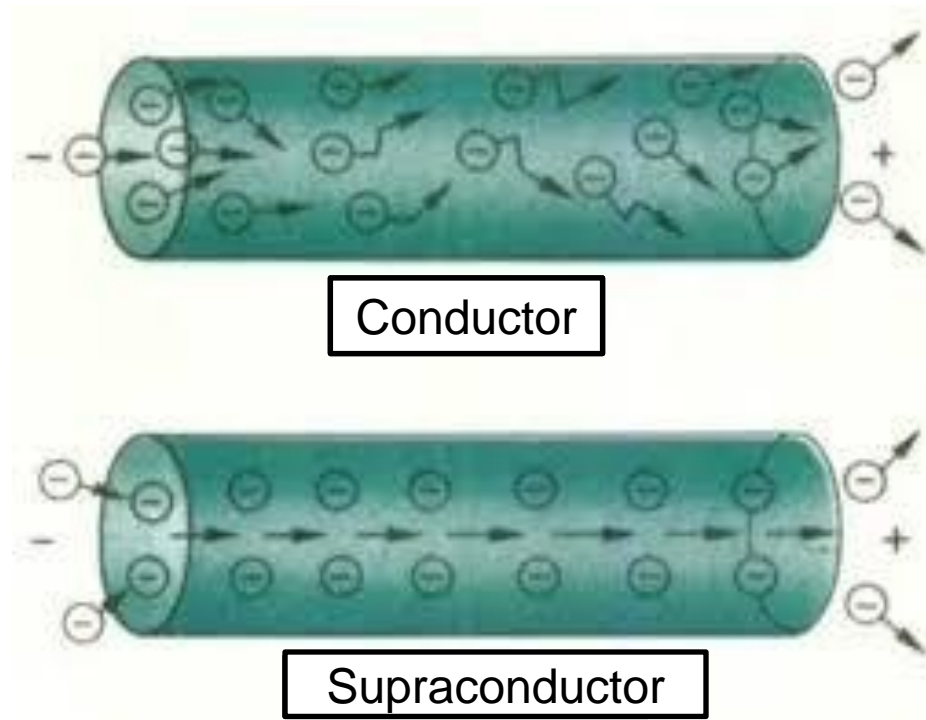
Transition phase

What is the « Transition phase »

A transition phase is a transformation of the studied system caused by the variation of a particular outside parameter (temperature, magnetic field...).



To obtain this transition phase,
it is compulsory to have a
superconductive material

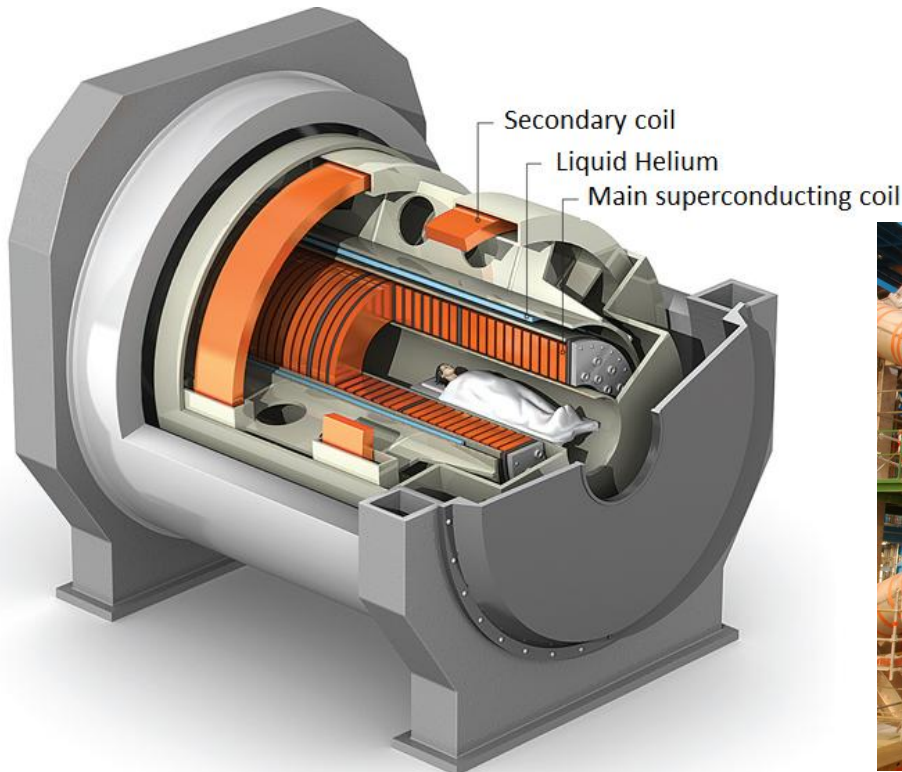


Uses of this phenomenon now !

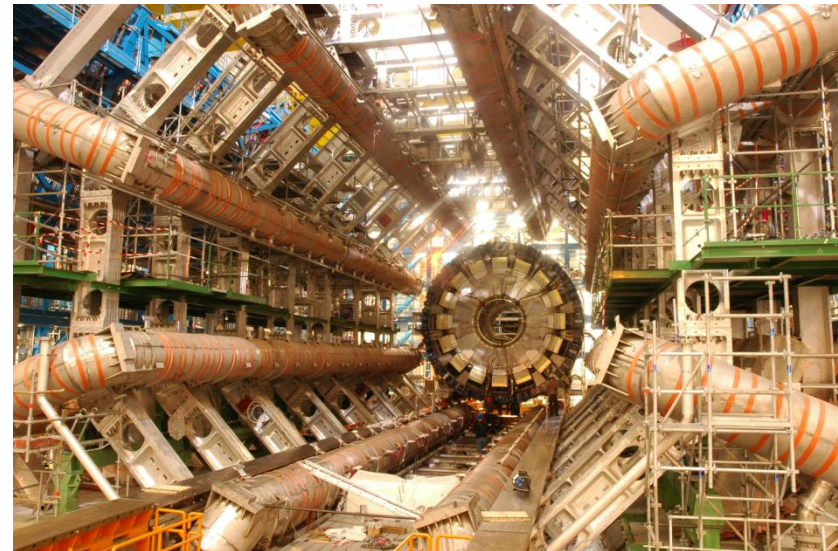
MRI (Magnetic Resonance Imagine) machines in hospitals

Particle accelerator in scientific equipment such as the Large Hadron Collider (**LHC**) / CERN) .

A superconducting magnet is an electromagnet made from coils of superconducting wire. LHC has 1,600 superconducting magnets.



MRI machine - <http://spectrum.ieee.org/>

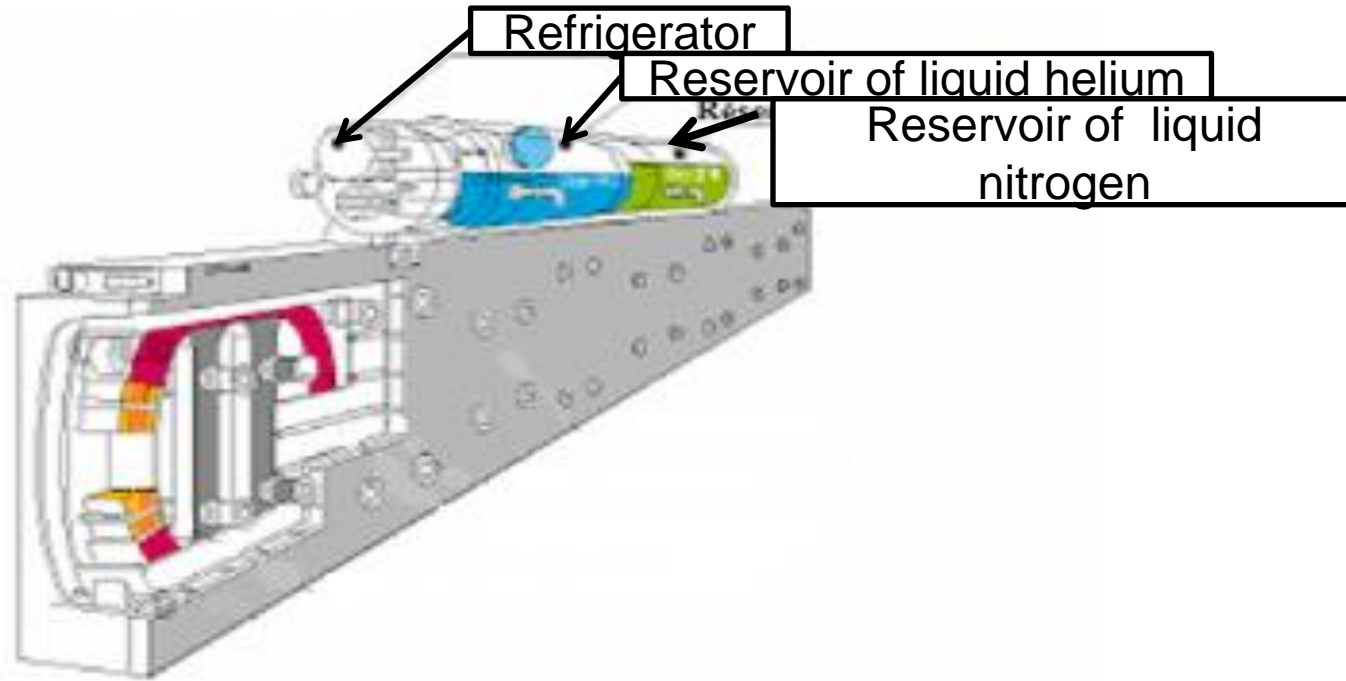
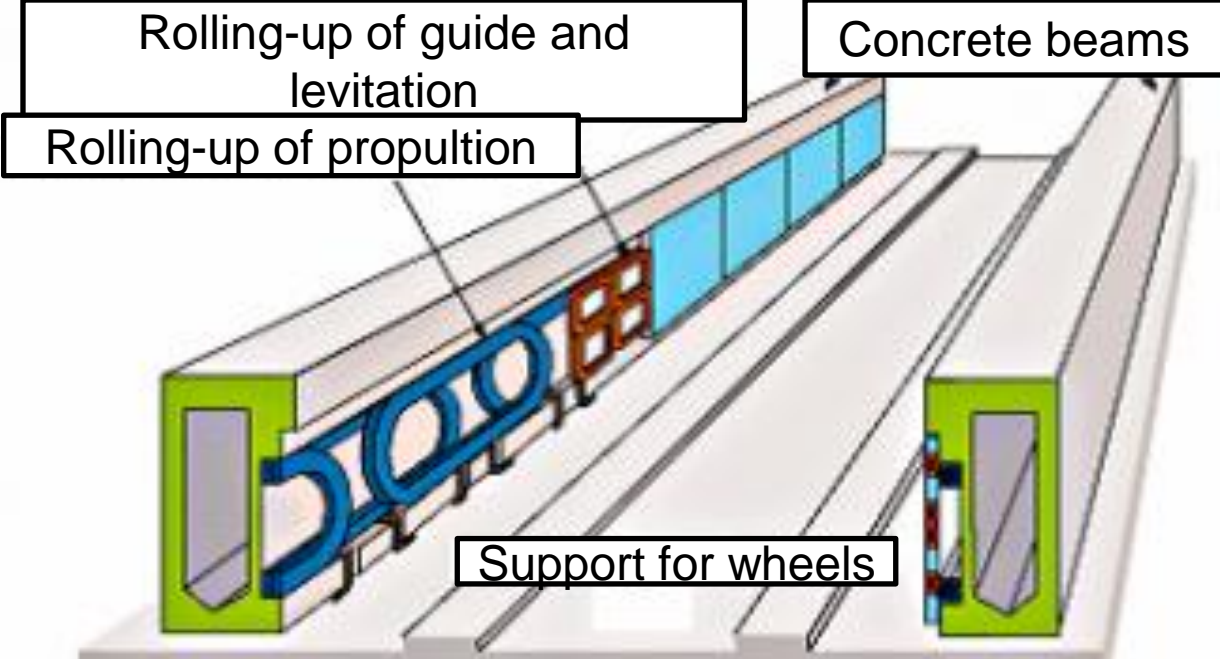


Atlas – LHC - <http://supercond.web.cern.ch>

Using this phenomenon in the future !



The train in the future could reach a speed of more than 700 km/h



Magsurf levitating in superconductor

http://www.dailymotion.com/video/xnkk27_mag-surf-le-skate-volant-supraconducteur_tech



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