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US and Japanese scientists control magnetic flux quanta

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US and Japanese scientists control magnetic flux quanta **Steve Bush**

Scientists from the US and Japan have found a way to control magnetic flux quanta inside superconductors.

Researchers from the University of Michigan and Japanese research institute Riken claim to be able to design 'pumps', 'diodes' and 'lenses' of magnetic flux quanta to create magnetic profiles within a sample. "The idea is to apply a current or magnetic field that is asymmetric in time," said G D'Anna of the Ecole Polytechnique Federale de Lausanne in Switzerland. "This makes it possible to create asymmetric flux motion, which should inspire researchers to build a new generation of superconducting devices for controlling magnetic flux quanta."

If they can be made, unwanted flux trapped inside superconducting devices could be removed leading to improved superconductors.

D'Anna has written about the technology in the November issue of Nature Materials.

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