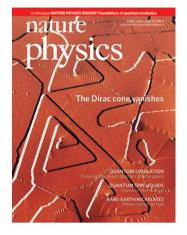
INSIGHT QUANTUM MECHANICS





COVER IMAGE

Bismuth selenide is a prototypical 3D topological insulator; its electronic spectrum features a Dirac cone populated by surface states. Now, it is experimentally and numerically shown that surface states are destroyed by a bandgap that forms beyond a certain critical compressive strain. Letter p294; News & Views p247

> IMAGE: YING LIU, YAOYI LI AND LIAN LI COVER DESIGN: ALLEN BEATTIE

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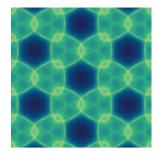
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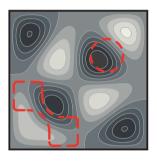
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A quantum spin liquid is a spin state with no magnetic order even at the lowest temperatures. To explain neutron scattering data on a 'kagome lattice' antiferromagnet, visons (elementary excitations of vortices) must be included, in addition to the usual fractionalized spinons. Letter p289



An optomechanical system that converts microwaves to optical frequency light and vice versa is demonstrated. The technique achieves a conversion efficiency of approximately 10%. The results indicate that the device could work at the quantum level, up- and down-converting individual photons, if it were cooled to millikelvin temperatures. It could, therefore, form an integral part of quantumprocessor networks.

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