



COVER

Finite element method simulation of an *Arabidopsis* shoot apical meristem where two cells have been laser-ablated. The color map indicates the von Mises stress (a measure of distortional stress); the white lines mark the directions of maximal principal stress, which are circumferential around the ablated cells, in agreement with experimentally determined microtubule orientations. See page 1650.

Image: Pawel Krupinski/Lund University

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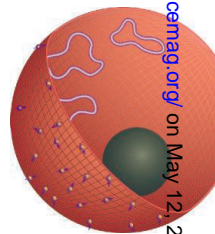
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High magnetic fields can strip away the superconducting regime of a cuprate superconductor, revealing the presence of an enigmatic quantum critical point.

10.1126/science.1165015

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Femtosecond XANES Study of the Light-Induced Spin Crossover Dynamics in an Iron(II) Complex

Ch. Bressler et al.

X-ray absorption spectroscopy resolves the dynamics of spin-state interconversions, which take place in less than a picosecond, in a well-studied class of iron compounds.

10.1126/science.1165733

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Chromatin-Associated Periodicity in Genetic Variation Downstream of Transcriptional Start Sites

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The periodic wrapping of DNA around nucleosomes in chromatin determines a periodic variation in mutation type and frequency around transcription start sites in a fish.

10.1126/science.1163183

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10.1126/science.1167449

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N. Phadnis and H. A. Orr

A *Drosophila* gene that causes sterility in the offspring of two species and may be important for speciation causes increased transmission of itself to progeny.

10.1126/science.1163934

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A Mouse Speciation Gene Encodes a Meiotic Histone H3 Methyltransferase

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A gene responsible for sterility in the offspring of two mouse species, and therefore important in speciation, regulates gene expression via methylation in chromatin.

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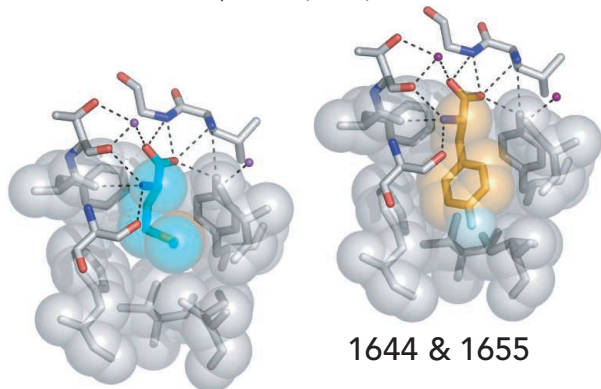
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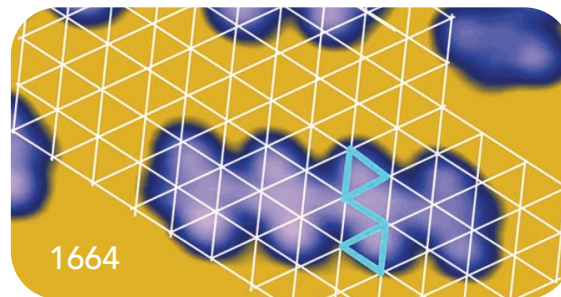
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RESEARCH ARTICLE: Analysis of Metagene Portraits Reveals Distinct Transitions During Kidney Organogenesis

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REVIEW: De Novo Organ Formation from Differentiated Cells—Root Nodule Organogenesis

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PERSPECTIVE: Intercellular Peptide Signals Regulate Plant Meristematic Cell Fate Decisions

J. E. Gray, S. Casson, L. Hunt

By controlling stem cell fate, secreted peptides control the formation of many plant cell types.



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