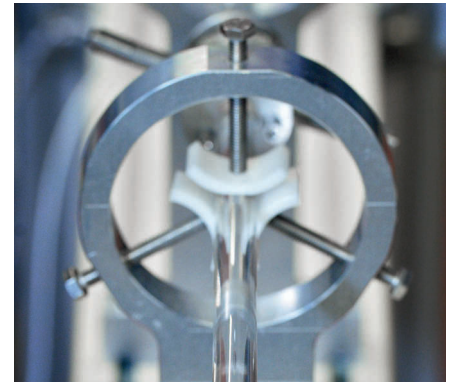




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42 Turbulent: Part of an experiment in which scientists investigate what causes turbulence.

18 INFORMATICS

Our Networked World

18 The Data Cloak

Data is the raw material of the modern information society. All too often, however, companies that require comprehensive data analyses risk breaching data protection guidelines. Scientists at the Max Planck Institute for Software Systems in Kaiserslautern seek to strike a balance between these conflicting interests. And they develop concepts to protect personal data against abuse.

24 On Time – For Sure

If the electronics in a car or a plane don't process commands exactly when they are supposed to, the consequences can be fatal – for instance when the airbag doesn't deploy, or deploys too late – when a crash occurs. Researchers at the Max Planck Institute for Software Systems in Kaiserslautern and Saarbrücken study how to construct real-time systems in such a way that they verifiably always react on time.

30 A Way Out of the Inner Prison

For people who suffer from amyotrophic lateral sclerosis and can no longer move any muscles or communicate with the outside world, computers that can read their minds would offer them a way out of their isolation. Scientists at the Max Planck Institute for Intelligent Systems in Tübingen hope to one day make it possible for these patients to communicate using their minds.

ON THE COVER More and more, our daily lives are determined by computers – whether we like it or not. This digital network is both a curse and a blessing. The scores of personal data we leave behind can easily fall into the wrong hands. At the same time, increasingly sophisticated computer technology offers new opportunities in medicine and technology and makes everyday life easier and safer.

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Turbulence is omnipresent. But it also has negative effects, for example in increasing the energy needed for pumps. Researchers at the Max Planck Institute for Dynamics and Self-Organization search for tricks to prevent eddies from forming where they interfere.

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Roundworms and beetles are the actors and the island of La Réunion the stage on which a great evolutionary drama unfolds. Scientists from the Max Planck Institute for Developmental Biology want to crack the code of this educational piece.

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