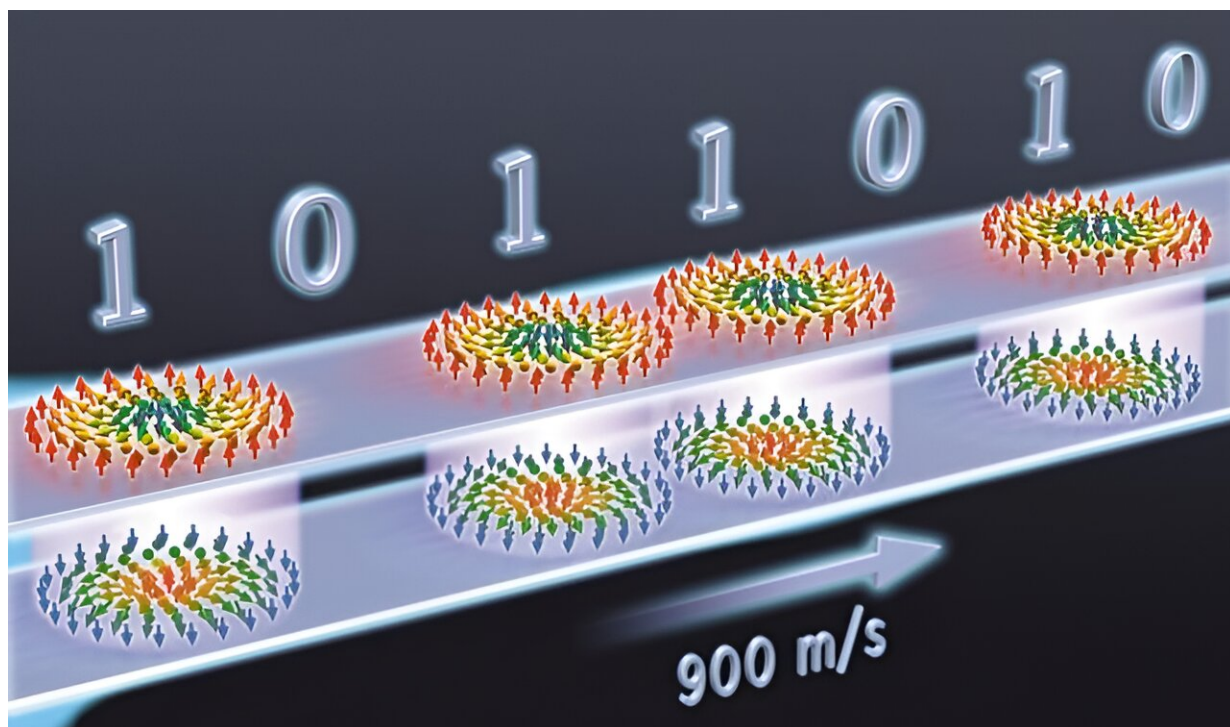


Skyrmions move at record speeds: A step towards the computing of the future

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Antiferromagnetic skyrmions moved in a magnetic racetrack by an electrical current. Credit: Bruno Bourgeois and Olivier Boulle

An international research team led by scientists from the CNRS has discovered that the magnetic nanobubbles known as skyrmions can be moved by electrical currents, attaining record speeds up to 900 m/s.

Anticipated as future bits in computer memory, these nanobubbles offer enhanced avenues for information processing in [electronic devices](#). Their tiny size provides great computing and information storage capacity, as well as low energy consumption.

Until now, these nanobubbles moved no faster than 100 m/s, which is too slow for computing applications. However, thanks to the use of an antiferromagnetic material as medium, the scientists successfully had the skyrmions move 10 times faster than previously observed.

These results, which were [published](#) in *Science* on 19 March, offer new prospects for developing higher-performance and less energy-intensive computing devices.

This study is part of the SPIN national research program launched on 29 January, which supports [innovative research](#) in spintronics, with a view to helping develop a more agile and enduring [digital world](#).

More information: V. T. Pham et al., Fast current-induced skyrmion motion in synthetic antiferromagnets, *Science* (2024). [DOI: 10.1126/science.add5751](#).
www.science.org/doi/10.1126/science.add5751

Provided by CNRS

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