

Best of Last Week—Measuring dark matter loss, a giant manned robot and the emotional hangover

January 3 2017, by Bob Yirka

The magnetic structure of a skyrmion is symmetrical around its core; arrows indicate the direction of spin. Credit: ill./©: Benjamin Krüger, JGU

(ScienceX)—It was another good week for physics as a team with Johannes Gutenberg University Mainz conducted [investigations of the](#)

[skyrmion Hall effect that revealed surprising results](#)—and in so doing, took another step toward the development of applications that use skyrmions in magnetic storage devices. Another team with members from the Russia and Moscow Institute of Physics and Technology and the Russia and Novosibirsk State University reported that they [had measured the loss of dark matter since the birth of the universe](#).

It was a big week for technology development news as well, as a team at Stanford University working with the Department of Energy announced that they had developed [a way to use the world's smallest diamonds to make wires three atoms wide](#)—the diamondoids were assembled LEGO-style, and could provide a means for building new types of devices. A team at Hankook Mirae Technology in Korea announced the development of [an Avatar-style manned robot that took its first baby steps](#)—the four-meter-tall behemoth is reportedly so heavy it makes the ground shake when it walks. And a team at San Diego State University announced that they were conducting testing of [a lie-detecting security kiosk of the future](#) called the Automated Virtual Agent for Truth Assessments in Real Time, with customs agents—it is supposed to detect people attempting to hide their true motives. And a team of engineers at Tufts University announced that they had created [programmable silk-based materials with embedded, pre-designed functions](#) that allow for chemical, optical or biological abilities.

In other news, an international team of researchers published evidence found in [caves proving that Neanderthals were cannibals](#). The researchers uncovered human bones with fractures to allow extraction of marrow. Also, a team with members from the University of Exeter Medical School and the University of Zaragoza in Spain found evidence that [gut microorganisms affect our physiology](#) via a protein in the intestines known to regulate levels of serotonin. And a team of microbiologists at the University of Groningen announced that they found evidence that [antibiotic resistance just became more complex](#)

—the researchers found some susceptible bacteria hiding behind resistant bacteria to protect themselves.

And finally, most are aware of the hangover that can occur after drinking too much, especially around this time of year, but now it appears that there may be another kind as well: researchers at New York University asked whether [there is such a thing as an emotional hangover](#). They found that emotional events can lead to internal brain states that persist for some period after the event—which meant such a hangover is possible.

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