

Best of Last Week—Less than zero energy, alternative to Bitcoin and men should avoid alcohol prior to conceiving a child

October 7 2019, by Bob Yirka

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It was a good week for physics, as a team at Goethe University [solved a mystery surrounding photon momentum](#) using a new spectrometer they built with previously unattainable resolution. And an international team

investigated the possibility of [less-than-zero energy in a quantum vacuum](#)—they report that such energy must be "paid back" in the end. Also, another international team reported on experiments in which [quantum material went where none had gone before](#) as part of mapping quantum criticality.

In technology news, a team at UC Santa Barbara developed a new method [to identify a person through walls from candidate video footage using only WiFi](#)—it could distinguish whether a person behind a wall was the same individual who appeared in a given video. Also, a team at Technion-Israel Institute of Technology demonstrated [a new water-splitting technique to generate clean hydrogen](#)—it involved separating the oxygen and hydrogen compartments in a PEC cell. And a team at Skolkovo Institute of Science and Technology developed [a tactile interaction strategy for human-swarm communication](#)—called SwarmTouch, it allows a human operator to communicate with a swarm of drones to guide their formation, while receiving feedback in the form of vibrations. Also, a team at Ecole Polytechnique Federale de Lausanne invented [a low-cost alternative to Bitcoin](#)—called Byzantine Reliable Broadcast, it does away with the consensus requirement.

In other news, the international team that makes up the Deep Carbon Observatory announced that study of a decade's worth of data showed that [humanity's emissions are 100 times greater than volcanoes](#). Also, a combined team of researchers from the Harvard T.H. Chan School of Public Health and Brigham and Women's Hospital found [a link between omega-3 fish oil supplements and a lower risk of heart attacks and cardiovascular disease](#).

And finally, if you are one of the millions of men around the world who are hoping to father a child, you might want to check out the results of a study conducted by a team at Central South University in China—they found that [fathers-to-be should avoid alcohol six months before](#)

[conception](#) to protect against congenital heart defects in their offspring.

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