# Best of Last Week—New approach to dark energy, ChatGPT passes law school exam, stress leads to depression

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It was a good week for physics as a pair of physicists at the University of Luxembourg, Alexandre Tkatchenko and Dmitry V. Fedorov, took a new approach to solving the mystery of dark energy—they proposed using quantum scaling to describe characteristics of quantum fields

corresponding to electrons and positrons and to generate the Casimir self-interaction energy density of a field. Also, a trio of physicists, Gilly Elor with Johannes Gutenberg University, and Robert McGehee and Aaron Pierce, both from the University of Michigan, developed a new model to explain dark matter—called Highly Interactive Particle Relics (HighiY), the model suggests that interactions between dark and normal mater are too weak to be detected using current technology. And pair of researchers, Ludovico Lami, with Universität Ulm and Bartosz Regula, with the University of Tokyo, claimed that prior work suggesting that there might be a second law of entanglement is wrong because entanglement is fundamentally irreversible.

In technology news, Jonathan Choi, a professor at Minnesota University Law School, announced that the ChatGPT bot passed a U.S. law school exam. And a trio of researchers at the University of Washington, Zerina Kapetanovic, Miguel Morales and Joshua Smith, designed and built a device that could transmit radio waves with almost no power—without violating the laws of physics. Also, a team at Korea's KAIST, Daejeon, Robotics & Artificial Intelligence Lab designed and built a versatile robodog capable of running across a sandy beach at 3 meters per second—called RaiBo, the quadrupedal robot is based on new technology used to model the forces of a walking robot. And a team at the Shenzhen Campus of Sun Yat-sen University, working with a colleague at Carnegie Mellon University, demonstrated a human-shaped robot that could liquify and escape jail, all using the power of magnets.

In other news, a team of researchers from several institutions in Italy and the U.K. discovered an anti-aging gene that is capable of rewinding the age of the heart by 10 years. Also, a pair of researchers at Peking University, Xiaodong Song and Yi Yang, found evidence showing that Earth's inner core rotates more slowly than the surface. And finally, a team at the Medical College of Georgia at Augusta University found that when chronic stress activates certain neurons, behavioral problems like

loss of pleasure and depression tend to result.