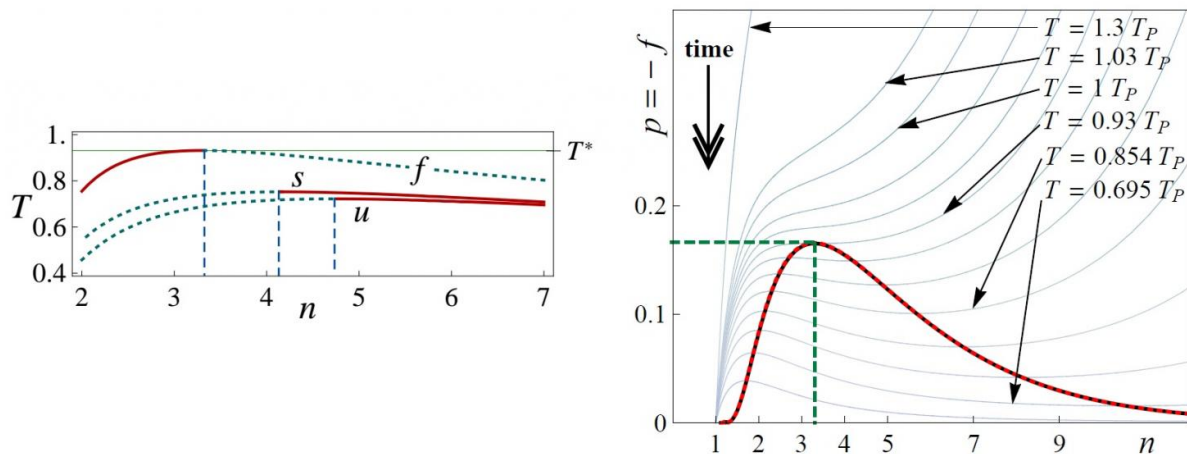


Best of Last Week – LHC readied for big run, human exodus likely due to climate change and gut benefits of coffee/wine

May 9 2016, by Bob Yirka



Researchers propose that the three dimensions of space may have been “frozen in” during the early moments of the universe. (Left) The Helmholtz free energy density (f) reaches its maximum value at a temperature $T = 0.93$, which occurs when space had $n = 3$ dimensions. (s and u represent entropy density and internal energy density, respectively.) (Right) Transitions to different dimensions cannot occur below a temperature of 0.93, corresponding to three dimensions. Credit: Gonzalez-Ayala et al. ©2016 *EPL*

(ScienceX)—It was a good week for physics as a pair of researchers, Julian Gonzalez-Ayala and F. Angulo-Brown asked, [why is space three-](#)

[dimensional](#)? They suggest that the second law of thermodynamics may yield the answer. Also, it was announced that the [world's largest particle smasher was set to push physics into the unknown](#)—the team at CERN announced that the LHC is being readied for its biggest run yet, and the news has [set physicists abuzz about a possible new particle](#), one that could very well upend the very nature of our most basic understanding of physics. And a team in Germany announced that they had [made 3-D holograms of atoms inside molecular structures](#)—the first imaging technique to do so.

In [space](#) news, SpaceX celebrated after [successfully landing a rocket on a platform at sea for the second time, after a satellite launch mission](#). Also, an international team of astronomers suggested that [three planets might host life forms adapted to infrared worlds and they are only 40 light years from Earth](#). The three exoplanets orbit a dwarf star and have Earth-like temperatures.

In other news, a combined team of researchers with the Max Planck Institute for Chemistry and the Cyprus Institute announced that they had found that [a climate exodus is expected in the Middle East and North Africa](#)—as the climate changes, people are expected to move, particularly in regions that may become too hot to be habitable. In related news, a team of Australian Earth scientists reported that [sea-level rise has claimed five islands in the Pacific Solomon Islands](#)—and an additional six reefs have been severely eroded. A team of researchers from several institutions in the U.S. concluded, after studying the connection between chemicals often used in cosmetics and birth outcomes, that [using personal care products while pregnant can be linked to adverse effects in babies](#).

And finally, if you are both a wine and coffee drinker, there is good news for you, as a team working in the Netherlands reported that [drinking coffee and wine is good for microbes in the gut](#)—it leads, they

claim, to a healthier and more diverse community of the kinds of microbes in the GI tract that are beneficial.

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