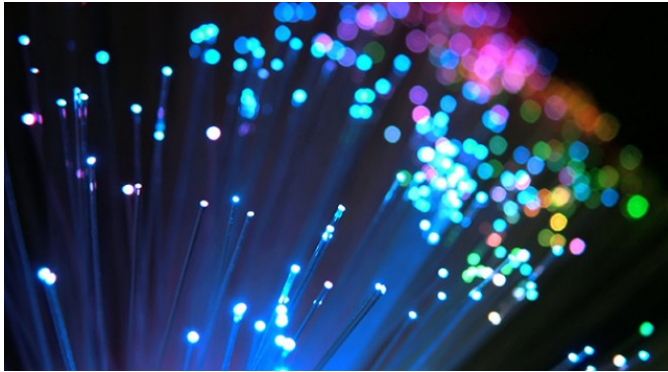


Near-Hollow Fibre for Faster Networking

Written by Marco Attard
03 April 2013

University of Southampton researchers create hollow, air-filled fibre optic cable-- eliminating the latency of standard fibre technology by pushing data at 99.7% of the speed of light.



The hollow optical fibre transfers data at up to 73.7TBps (roughly 10 terabytes per second), some 1000 times faster than current 40-gigabit optic links.

"Light propagates 31% slower in a silica glass fibre than in vacuum, thus compromising latency," the paper, titled "Towards high-capacity fibre optic communication at the speed of light in vacuum," says.

While traditional optic fibre transmits data through beams of light, information does not actually go at light speed (300000 km/s)-- the glass making the fibre slows down light to around 200000 km/s. The researchers solve this issue through "hollow-core photonic-bandgap fibre," a cable consisting mainly of air but still guiding light through twists and turns, if with data loss of 3.5dB/km.

The data loss issues mean the cable is not ideal for situations demanding longer transmission distances (such as submarine cables), but the researchers claim it is ideal for "short reach low-latency applications" of the supercomputer interconnect or data centre variety.

Go [Towards High-Capacity Fibre-Optic Communications at the Speed of Light in Vacuum \(Nature\)](#)