Levitating glass particles are fastest spinning objects ever seen

TINY glass particles spun by a laser are the fastest spinning objects we have ever seen.

Two teams have used circularly polarised light to set charged particles in motion. As this light travels, it spins and can impart rotational energy to matter.

René Reimann at the Swiss Federal Institute of Technology in Zurich and team trapped a silicon dioxide particle in a polarised laser. Drag from air particles was removed by lowering the pressure, letting the silicon dioxide spin more than 1 billion times a second (arxiv.org/abs/1803.11160).

Tongcang Li at Purdue University, Indiana, led another team doing similar work. They also used glass nanoparticles, but two stuck together for strength. He and his team measured them rotating at 1.3 gigahertz, or 1.3 billion times a second (arxiv.org/abs/1804.06570).

These rotating particles may help us detect quantum friction – drag created by photons blinking in and out of existence – and tell us more about the origin of the cosmos: spinning particles may be the source of gigahertz signals in the cosmic microwave background left by the big bang.

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