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Scientists could have come across proof of dark matter

Signal of an invisible kind of matter that interacts with gravity has been picked up

WASHINGTON Scientists have revealed that they have picked up an atypical photon emission in X-rays coming from space and say it could be evidence for the existence of a particle of dark matter.

The researchers at EPFL's Laboratory of Particle Physics and Cosmology (LPPC) and Leiden University believe they could have identified the signal of a particle of dark matter after sifting through reams of X-ray data.

When physicists study the dynamics of galaxies and the movement of stars, they are confronted with a mystery. If they only take visible matter into account, their equations simply don't add up: the elements that can be observed are not sufficient to explain the rotation of objects and the existing gravitational forces. There is something missing. From this, they deduced that there must be an invisible kind of matter that does not interact with light, but does, as a whole, interact by means of the gravitational force.

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The signal appears in the X-ray spectrum as a weak, atypical photon emission that could not be attributed to any known form of matter. Above all, "the signal's distribution within the galaxy corresponds exactly to what the researchers were expecting with dark matter, that is, concentrated and intense in the centre of objects and weaker and diffused on the edges.

The study will be published in *Physical Review Letters*. **ANI**