

China: China uses a quantum satellite to transmit potentially unhackable data

In a major step towards building a hack-proof global quantum communication network, [China](#) has sent an unbreakable code from its [quantum satellite](#) to the Earth, marking realization of [quantum key](#) distribution technology for the first time.

The achievement based on experiments conducted with the world's first quantum satellite, Quantum Experiments at Space Scale (QUESS), was published in the journal Nature on Thursday, Xinhua news agency reported.

China launched the world's first quantum satellite, nicknamed "Micius" after a 5th Century Chinese philosopher and scientist, on August 16, 2016.

Quantum key technology is used in quantum communications to make eavesdropping impossible and to perfectly secure the communication.

The satellite sent quantum keys to ground stations in Xinglong, in north China's Hebei province, and Nanshan, near Urumqi, capital of northwest China's Xinjiang Uygur region, said Pan Jianwei, lead scientist of QUESS and an academician of the Chinese Academy of Sciences (CAS).

The communication distance between the satellite and the ground station varies from 645 km to 1,200 km, and the quantum key transmission rate from satellite to ground is up to 20 orders of magnitude more efficient than that expected using an optical fiber of the same length, he said.

When the satellite flies over China, it provides an experiment window of about 10 minutes. During that time, the 300 kbit secure key can be generated and sent by the satellite, according to Pan. "That, for instance, can meet the demand of making an absolute safe phone call or transmitting a large amount of bank data," Pan said.

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