

Entanglement between two spatially separated atomic modes

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Science **360** (6387), 416-418.
DOI: 10.1126/science.aao2035

Splitting the entanglement

When particles in a quantum mechanical system are entangled, a measurement performed on one part of the system can affect the results of the same type of measurement performed on another part—even if these subsystems are physically separated. Kunkel *et al.*, Fadel *et al.*, and Lange *et al.* achieved this so-called distributed entanglement in a particularly challenging setting: an ensemble of many cold atoms (see the Perspective by Cavalcanti). In all three studies, the entanglement was first created within an atomic cloud, which was then allowed to expand. Local measurements on the different, spatially separated parts of the cloud confirmed that the entanglement survived the expansion.

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