"Visualizing Entanglement"

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Entanglement is the quintessential quantum mechanical phenomenon. It is in fact at the heart of almost every instance of quantum mechanical "paradox" and is a fundamental resource for quantum communications and quantum computing. For all its importance, however, entanglement is still poorly understood, perhaps because of the bewilderingly high-dimensional Hilbert spaces in which entangled states live. Here we present a novel technique for visualizing all of the information encoded into a two-qubit entangled states, and discuss this visualization's practical application for engineering better fiber-based sources of entangled photon pairs.