New entanglement properties in systems of higher-spin particles JAY LAWRENCE, University of Chicago and Dartmouth College, MARIO GAETA, ANDREI KLIMOV, University of Guadalajara, Jal., Mexico — We describe a new entanglement property of four-qutrit states that is inaccessable to any number of qubits. In such states, every particle is equally entangled with all others, as in GHZ states, but the entanglement is more robust than that of any four-qubit state. We describe the entanglement properties of related generalized graph states of three-state and five-state particles, and show how these suggest that new entanglement properties will emerge more generally for systems of p+1 particles, each having p states, where p is a prime number.

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