

**Learning goals. After reading the notes on entanglement, some of the key things the student should know are:**

- Be able to account for what entanglement is and how it is related to the EPR-paradox.
- Understand the derivation of Bell's inequality and the CHSH inequality, and how these rule out hidden variable theories based on local realism.
- Be able to use the density matrix formalism on entangled systems and perform simple calculations of e.g. reduced density matrices and expectation values in such systems.