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What does it mean for half of an empty cavity to be full? ERIC BROWN, University of Waterloo — It is well known that the vacuum state of a quantum field is spatially entangled. This is true both in free and confined spaces, for example in an optical cavity. The obvious consequence of this, however, is surprising and intuitively challenging. Namely, that in some sense half of an empty box is full. Formally this is clear, but what does this physically mean in terms of, say, measurements that can actually be made? In this contribution I will discuss a new and simple perspective that answers this question precisely and physically concretes the phenomenon. In so doing I will also propose a simple experimental setup for the verification of, and indeed the efficient harvesting of, vacuum entanglement. Preprint: http://arxiv.org/abs/1409.4203

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