“Probabilities in Statistical Physics: What are they?”

There's something puzzling about the way that probabilities are treated in standard statistical mechanics texts. They are introduced because of incomplete knowledge of the state of a system, which suggest that the probabilities have to do with what we do and don't know, rather than with the physical system under investigation. On the other hand, they are used to generate testable predictions, which suggests that we think of them as something physical. In this talk, I will propose a reading of these probabilities that makes sense of both aspects and, I claim, does justice to the way we use probabilities in statistical physics.