We call a von Neumann algebra with finite dimensional center a multifactor. We introduce an invariant of bimodules over II$_1$ multifactors that we call modular distortion, and use it to formulate two classification results.

We first classify connected, finite index, finite depth II$_1$ hyperfinite multifactor inclusions $A \subset B$ in terms of the standard invariant (a unitary planar algebra), together with the restriction to $A$ of the unique Markov trace on $B$. The latter determines the modular distortion of the associated bimodule. Three crucial ingredients are Popa’s uniqueness theorem for such inclusions which are also homogeneous, for which the standard invariant is a complete invariant, a generalized version of the Ocneanu Compactness Theorem, and the notion of Morita equivalence for inclusions.

Second, we classify fully faithful representations of unitary multifusion categories into bimodules over hyperfinite II$_1$ multifactors in terms of the modular distortion. Every possible distortion arises from a representation, and we characterize the proper subset of distortions that arise from connected II$_1$ multifactor inclusions. (Received September 01, 2020)