Epistemic and Semantic Effective Realism - Michael Miller

Abstract:
Effective field theory affords the resources to express physical theories in a manner that makes their intended domain of applicability explicit. Several philosophers have leveraged these resources to articulate a new form of scientific realism they call effective realism. On this view, the locus of realist commitment is a theory's claims about the intended domain of applicability. In this talk, I will distinguish between two forms of this view. According to the first epistemic form of the view, effective realism retains standard commitments about the relationship between mathematical structure and physical semantic content, but contains a novel epistemic thesis concerning the physics outside the theory's domain of applicability. According to the second semantic form of the view, effective realism involves a fundamental revision of how physical semantic content is to be associated with the mathematical structures of the theory. My central aim will be to establish this distinction, though I will ultimately advocate for the semantic form of the view.