AGPhil 1: Metaphysics of Physics

Time: Monday 11:00–13:00 Location: H4

Invited Talk AGPhil 1.1 Mon 11:00 H4

What's so special about initial conditions? — •Matt Farr — University of Cambridge, UK

The early universe is thought to be extremely low probability in a way that calls for explanation. Some have used the 'initialness defence' to argue that initial (as opposed to final) conditions are intrinsically special in that they don't require further explanation. Such defences commonly assume a primitive directionality of time to distinguish between initial and final conditions. I outline and support a deflationary account of the initialness defence consistent with an directionless ontology of time, and argue that although there is no intrinsic difference between initial and final conditions, once we have sufficient structure to discern them we should not seek explanations of low-probability initial conditions.

AGPhil 1.2 Mon 11:45 H4

The mereological problem of entanglement — •Paul M. Näger — Department of Philosophy, WWU Münster, Germany

The discipline of mereology treats the question how parts and wholes relate and has its roots in ancient Greek philosophy. Especially in the 20th century its concepts have been sharpened considerably resulting in a formalism called classical mereology. From this point of view, entangled quantum systems are an anomaly since they are well-known to involve some kind of holism in the sense that the quantum state of the whole cannot be reduced to the quantum state of the parts. Are entangled systems undivided wholes? In this talk I shall argue on the basis of the quantum mechanical formalism that they are not: When two objects are entangled, there are only these objects but no whole, and the holistic entangled property is carried collectively by these objects. (Paper available at: https://philarchive.org/rec/NGETMP)

Invited Talk AGPhil 1.3 Mon 12:15 H4

Structuralism as a Stance — •Kerry McKenzie — UC San Diego, USA

Bas van Fraassen argues in 'The Empirical Stance' that physicalism - the view that fundamentally all is physical - should be viewed not as a doctrine but rather as a 'stance': that is, as a cluster of attitudes, policies, and heuristics concerning how to theorize and conduct research. In this talk, I will argue that the same considerations support regarding ontic structuralism - the view that fundamentally all is structure - as a stance also. More specifically, I will argue that rather than a doctrine about how the world is fundamentally, structuralism should be viewed as the injunction to always foreground in one's metaphysics the fact that the language of physics is mathematics. Some benefits of doing so will be presented.