

AGPhil 6: Spacetime Theories

Time: Wednesday 11:00–12:30

Location: BEY 154

Invited Talk AGPhil 6.1 Wed 11:00 BEY 154
Static vs. Dynamic Views of Temporal Existence in Relativistic Spacetimes — ●CORD FRIEBE — Universität Bonn, Institut für Philosophie

Special Relativity allegedly contradicts presentism, the view that empirical objects or events only exist if they are present, and favours, apparently, the block universe view according to which objects or events exist independently of being present by being located at some spacetime point or other. In the light of recent developments in the analytic philosophy of time, however, the expression "block universe" turns out to be highly ambiguous: What is called, by philosophers, "eternalism" is 'more dynamic' than the physicist's "block universe"; and, consequently, what is called "presentism" is 'more dynamic' even than Newtonian spacetimes or spacetimes with a cosmic time. The aim of my talk is to clarify the terminology, in spelling out "presentism" and the "block universe view", and to sketch the consequences for reinterpreting relativistic spacetime theories.

Invited Talk AGPhil 6.2 Wed 11:45 BEY 154
How the emergence of spacetime might save the structuralist

— ●CHRISTIAN WÜTHRICH — University of California, San Diego

Spacetime structuralism maintains that spacetime is a relational complex consisting of spacetime points and the spatiotemporal relations they stand in. These points lack intrinsic properties and accrue their identity only by virtue of the position they inhabit in the relational complex. This view faces the difficulty that for highly symmetric spacetimes, such as the Friedman-Lemaitre-Robertson-Walker spacetimes, vast classes of points are identical as their relational positions are indiscernible (Wüthrich 2009). In one conceptually very clear approach to formulating a quantum theory of gravity, the so-called causal set theory, the fundamental structures—the causal sets—ought to be interpreted structurally, too. Analogously, structuralist readings of causal sets confront the challenge of distinguishing relationally indiscernible elements of highly symmetric causal sets. Compared to classical general relativity, however, the problem turns out to be much less severe. The reason for this has to do with the way relativistic spacetimes emerge from causal sets. My talk shall elucidate this emergence and how it acts against the symmetries requisite to challenge the structuralist.