

Mathematische Körper und platonische Naturphilosophie

The scope of this paper is restricted to the late ancient Platonists, more particularly Syrianus, Proclus, and Simplicius. Their views on this matter are based mainly on Plato's works, Aristotle's reports on, and criticism of, Plato, and on a broad exegetical tradition.

In his commentary on *Metaphysics* XIII.2, Syrianus denies that mathematical bodies can be present in nature 'because two solids cannot coincide'. Simplicius denies that Aristotle in this passage criticises Plato and argues that he is wrong in his claim regarding the impossibility of solids being collocated. The passage has often been misunderstood: I argue that Syrianus does not claim that Plato's triangles, constituting the four elements, are real. Syrianus takes no instrumentalist position. His argument is rather about the ontological status of the triangles as immaterial forces entering matter. Syrianus distinguishes between the immaterial and the enmattered existence of these triangles. His views are in line with Proclus' distinction of several ontological levels at which mathematic objects exist. I discuss his account of the ontology of mathematical objects, the status of geometrical bodies, the role of intelligible matter, and the unextended existence of geometrical objects in their highest manifestations.

As one of the main features distinguishing mathematical from physical bodies, possibly as the most important distinction, one would think that physical bodies resist co-location whereas material bodies do not. Without any problem mathematical bodies can be construed as overlapping in three-dimensional (or n -dimensional, with $n > 2$) space, however one conceives of geometrical space (e.g. as an ideal space or also a mind-dependent construct). This does not seem to be the case with physical bodies. Plato's 'triangles', which Proclus and Simplicius consider to be three-dimensional bodies (prisms) cannot overlap. As soon as they have entered the receptacle, they touch or bounce off each other when they collide, but never overlap. One could argue that their materiality consists in nothing other than this, at least in the case of Plato's *Timaeus* (I will question some of aspects of recent interpretations of the receptacle), while Proclus and Simplicius have a more complex notion of materiality, which in their view consists of several layers, with 'resistance' entering at a higher level. Proclus and Simplicius distinguish several types of materiality, of which the higher (the 'relatively immaterial' heavenly bodies and the spheres) allow of collocation.