

The points of transition among the various forms of matter are ill-understood so far. This is not only true for physics proper, but also for other fields of research that deal with the concept of matter one way or another. The interesting point is that on the very fundamental level of theoretical physics as well as on the very complex and involved level of non-physical fields such as psychology and sociology, the underlying concept of matter is quite abstract, while within the medium range of molecular levels of chemistry and biology, respectively, in material science as well as the evolutionary science of ecological systems, the underlying concept of matter becomes comparatively concrete. The question is whether this is an epiphenomenon of a metatheoretical perspective influenced by the cognitive framework available to human beings rather than an explicit property of the world. In other words: To what extent is the theoretical description throughout the various fields of interest pre-formatted by modality instead of mapping simply, if not precisely, what is accessible of reality? And what does it mean therefore, to develop a unified theory of matter (comparable to similar unified theories of energy and/or information)? In this panel, these questions shall be discussed under different perspectives, ranging from the philosophy of nature, through physics, chemistry, and biology, up to psychology and sociology. In their ongoing research work, the invited speakers represent many of these fields.