

Niels Obers (Nordita, Sweden): *String theory: an approach to quantum gravity*

## Recent developments in non-relativistic gravity and string theory

Non-relativistic gravity and string theory may provide a third route towards understanding relativistic quantum gravity, complementing the more conventional paths that approach the latter either from the quantum field theory or general relativity perspective. I will start by reviewing recent developments in understanding non-relativistic limits and expansions of general relativity. Central to this is a torsional generalization of Newton-Cartan geometry, going beyond the geometry introduced by Cartan to geometrize Newton's law of gravity.

I will furthermore discuss non-relativistic string theory, which is a corner of string theory with a non-relativistic spectrum. The formulation on a flat target spacetime was introduced already twenty years ago, but recent progress in our understanding of non-Lorentzian geometries such as Newton-Cartan geometry has enabled to formulate this sector on arbitrary curved nonrelativistic spacetimes. Finally, I will comment on how non-relativistic gravity and string theory can play a role in novel holographic correspondences.