

Realisability for coinduction with applications in computable analysis

Ulrich Berger (Swansea, UK)

We introduce a formalised realisability interpretation of extensions of first-order theories by inductive and coinductive definitions in an untyped lambda-calculus. In order to demonstrate that this interpretation is practically useful we give a coinductive characterisation of uniformly continuous real functions and derive from this several (proven correct) lazy algorithms for exact real number computation.