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演題：Programming with Infinitesimals:

A WHILE-Language for Hybrid System Modeling

概要：

We add, to the common combination of a WHILE-language and a Hoare-style program logic, a constant  $dt$  that represents an infinitesimal (i.e. infinitely small) value. The outcome is a framework for modeling and verification of hybrid systems: hybrid systems exhibit both continuous and discrete dynamics and getting them right is a pressing challenge. We rigorously define the semantics of programs in the language of nonstandard analysis, on the basis of which the program logic is shown to be sound and relatively complete.

(Joint work with Ichiro Hasuo)