
Computer Science Seminar

Wednesday, March 13, 2019

13:30--14:30 Seminar room B (Building no. 6), Kiryu campus, Gunma University

Professor Helmut Schwichtenberg (Ludwig-Maximilians-Universität-München, Germany)

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Title: Equality and extensionality

Abstract. We sketch a theory of computable functionals (TCF) based on finitary algebras given by their constructors. Its intended semantics admits non-total functionals. For closed algebras of level zero we allow infinite stream-like objects. For higher types we define (pointwise) equality as a logical relation, and extensionality by diagonalization of equality. We define realizability and -- in the spirit of Kolmogorov (1932) -- add an invariance axiom: every computationally relevant (c.r.) formula A is equivalent to the existence of an extensional realizer of A . Then we can prove (ordinary and dependent) choice, and also a soundness theorem stating that the computational content extracted from a proof of a c.r. formula A realizes A .

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