

Logikseminariet Stockholm–Uppsala

Dieter Spreen (Siegen)

On uniform approximation in domains

For a large class of domains there is a directed set of continuous self-maps, each below the identity, with the identity as their least upper bound. This allows to approximate each domain element in a uniform way. One would like to know how good such approximations are, i.e., one would like to define an appropriate quasi-uniformity on the domain. Since the Scott topology on the domain reflects the essential properties of computations any such quasi-uniformity should of course be compatible with it. The natural symmetrisation of the Scott topology with respect to the domain order is the Lawson topology. So, a further requirement is that the induced uniformity is compatible with the Lawson topology. It turns out that in the case of coherent spaces these two conditions force the domain to be an FS-domain.

A further characterisation of the FS-domains is obtained by comparing the quasi-uniformity defined by the family of approximating self-maps with the Pervin quasi-uniformity associated with the Scott topology.

Remember that the FS-domains (with Scott continuous maps) form one of the two maximal Cartesian closed full subcategories of the category of continuous domains.

Onsdag 28 september kl. 10.30–12.15,
sal 1145, MIC,
Polacksbacken, Uppsala.

Dag Normann (Oslo)

On sequential functionals of type 3

Robin Milner showed that up to isomorphism there is exactly one typed hierarchy of Scott domains that may serve as a fully abstract model for Scott's LCF, or equivalently, for Plotkin's PCF. We will give a brief introduction to PCF and to Milner's construction. We will discuss the "full abstraction problem", i.e. the problem of finding a conceptually well based characterization of Milner's model. One attempt is the game-theoretic approach taken by Abramsky, Hyland and others, defining the sequential functionals. We will discuss possible characterizations of the sequential functionals. We will show that the extensional ordering of the sequential functionals of type 3 is not bounded complete, thereby showing that this ordered set is not isomorphic to Milner's model.

Onsdag 28 september kl. 13.30–15.15,
sal 1245, MIC,
Polacksbacken, Uppsala.

<http://www.math.su.se/~jesper/seminarier/>