ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

1. Logic

1991 MS Classification: 54, 18, 60

Nusser, Harald, Free University of Berlin, Germany

Completions of proabilistic semiuniform convergence spaces

A *probabilistic semiuniform convergence space* is a pair $(X, \bar{\mathcal{J}})$, where X is a set and $\bar{\mathcal{J}}$ is a set $\{\mathcal{J}^\lambda \mid \lambda \in [0,1]\}$ of semiuniform convergence structures on X satisfying two additional axioms which allow a probabilitstic interpretation:

(i) $\mathcal{J}^\lambda \subseteq \mathcal{J}^\nu$. (ii) $\mathcal{J}^0$ is the set of all (proper) filters on $X \times X$.

The category of probasbilistic semiuniform convergence spaces and uniformly continuous maps forms a strong topological universe, which contains the category of semiuniform convergence spaces as a bireflective and bicoreflective subcategory.

Completions of probabilistic semiuniform convergence spaces and certain subclasses, such as probabilistic filter spaces, probabilistic Cauchy spaces and probabilistic uniform limit spaces (= probabilistic uniform convergence spaces), will be presented.

Reference: G. Preuß, Semiuniform convergence spaces, *Math. Japonica 41* (1995), 465 - 491.