Cornell University Library

We gratefully acknowledge support from the Simons Foundation and member institutions

arXiv.org > math > arXiv:1107.3519

Search or Article-id

(Help | Advanced search)

All papers ▼ | Go!

Mathematics > History and Overview

Complete Totalities

Rafi Shalom

(Submitted on 18 Jul 2011 (v1), last revised 15 Nov 2011 (this version, v5))

The cumulative hierarchy conception of set, which is based on the conception that sets are inductively generated from "former" sets, is generally considered a good way to create a set conception that seems safe from contradictions. This imposes two restrictions on sets. One is a "limitation of size," and the other is the rejection of non-well-founded sets. Quine's NF system of axioms, does not have any of the two restrictions, but it has a formal restriction on allowed formulas in its comprehension axiom schema, which reflects a similar notion of elements being prior to sets. Here we suggest that a possible reason for set antinomies is the tension between our perception of sets as entities formed from elements by an imaginary aggregation operator, and our wish to regard sets as existing "at once." A new approach to sets as totalities is presented based on a notion of "concurrent aggregation," which instead of avoiding "viscous circles," acknowledges the inherent circularities of some predicates, and provides a way to characterize and investigate these circularities.

Comments:	Changes: Mainly a different exposition of the the notions of replacement and complete totalities
Subjects:	**History and Overview (math.HO)**
Cite as:	**arXiv:1107.3519** [math.HO]
	(or **arXiv:1107.3519v5** [math.HO] for this version)

Submission history

From: Rafi Shalom [view email]

[v1] Mon, 18 Jul 2011 17:54:15 GMT (29kb)
[v2] Tue, 26 Jul 2011 12:26:20 GMT (29kb)
[v3] Fri, 26 Aug 2011 09:27:05 GMT (31kb)
[v4] Thu, 15 Sep 2011 09:33:12 GMT (32kb)
[v5] Tue, 15 Nov 2011 11:04:33 GMT (32kb)

Which authors of this paper are endorsers?