

# Re: Simplifying M theories.

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On Jun 19, 6:54 pm, MoeBlee <jazzm...@xxxxxxxxxxxx> wrote:

On Jun 19, 3:25 pm, zuhair <zaljo...@xxxxxxxxxx> wrote:

6: Infinity:  $Ax((Ay( y \text{ in } x \rightarrow y \text{ is a universe})$   
and  $x \text{ is countable}) \rightarrow H(\text{Union } x))$ .

Please define 'countable' and 'Union'.

countable is defined in the conventional manner.

$x$  is countable iff (  $x$  equinumerous to  $\Omega$  or  $x$  subnumerous to  $\Omega$  ).

$\Omega$  is the class of all finite ordinals.

$\text{Union } (x)$  is the set of all members of members of  $x$ .

Define:  $y = \text{U}x \leftrightarrow Az( z \text{ in } y \leftrightarrow \text{Em}(m \text{ in } x \text{ and } z \text{ in } m))$ .

7: Inflation:

$Ax Ay ( (x \text{ is a set and } Az(z \text{ in } y \rightarrow z \text{ is a universe}) \text{ and } y \text{ equinumerous } x ) \rightarrow y \text{ is a set})$ .

Please define 'equinumerous'.

It is the same conventional definition.

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This theory contain all axioms of ZF–Regulariy–choice.

The proof of that is trivial I guess.

What I mean by axioms of ZF–Regulariy–choice is when we apply them to "sets" in this theory.

theorm of pairing of sets:

The unordered pair of sets is a set.

(x is a set & y is a set)  $\rightarrow$  {x,y} is a set.

Proof: by definition there should exist a universe of which x is a member , and there exist a universe which contain y as a member. Now from connectivity axiom either the universe which contain x is a member of the universe which contain y or the converse, in both situations the members of all of one of the universes will be in the other ( since universes are transitive sets ), so the net result is that there will exist a universe which contain both x and y as members in it, so {x,y} would be a subset of this universe, and so it will be a member of the universe that contain this universe as a member in it, and thus {x,y} is a set.

Proof for every class x, there exist  $U_x$ .

Since members of any class x are sets, then the members of these sets are also sets (because universes are transitive), thus there will exist a class of all of them from comprehension, which is the union class of x.

for any 'set' x,  $U_x$  is a set.

This is simple because  $U_x$  will be a subset of the universe which contain x as a member, thus it will be a member in the next universe (i.e. the universe which contain the universe which contain x as a member) and thus a set.

For any 'set' x, the power class of x is a set.

this is simple also since every subset of x is also a set, then the class of all subsets of x will be a subclass of the universe which contain x as a member, and thus a member of the next universe, thus a set.

Infinity is proved easily, since the class  $X = \{0, \text{Power}0, \text{powerpower}0, \dots\}$  would be equinumerous to  $\Omega$ , thus from axiom of infinity Union X has the property H, and it is clear that X has the two properties of transitivity, and of having every subset of a

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member of it as a member in it, thus  $UX$  is a Universe by definition, and thus it has a power set of which  $Ux$  would be a member, of course this power set of  $UX$  is a universe also thus  $UX$  is a set. it is clear that  $\Omega$  is a subclass of  $X$ , and thus a member of  $\text{Power}UX$ , thus  $\Omega$  is a set, proving infinity.

the proof of separation on sets is clear.

The proof of replacement directly comes from axiom of inflation.

Zuhair

MoeBlee

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