

1086-L5-1597 **Daniel C. Sloughter*** (dan.sloughter@furman.edu), Department of Mathematics, Furman University, Greenville, SC 29613. *Philosophical and mathematical considerations of continua*. Preliminary report.

What is a continuum? How is one composed?

Are these mathematical or philosophical questions? Over the years, mathematicians have conceived of continua in various ways. For the most part, modern mathematics considers a linear continuum to be anything homeomorphic to the real line (the real numbers endowed with a certain topology). Is this progress, or just consensus around one of many possible conventions?

Philosophical considerations of the nature of continua go back to at least Zeno. Over the last 2500 or so years, philosophers have given careful thought to the consequences of differing hypotheses concerning the makeup of continua without ever reaching anything close to a consensus. Is this lack of progress?

This talk will provide a brief historical overview of how philosophers and mathematicians have thought about continua and then address the question of whether or not philosophers have anything to contribute to how mathematicians conceive of them. In particular, we will look at some criticisms which C. S. Peirce directed at the identification of linear continua with the real numbers. (Received September 23, 2012)