

Meeting: 1003, Atlanta, Georgia, MAA CP P1, MAA Session on Philosophy of Mathematics

1003-P1-655 **Daniel C. Slougher*** (dan.slougher@furman.edu), Department of Mathematics, Furman University, Greenville, SC 29613. *Realism and Mathematics: Peirce and Infinitesimals*. Preliminary report.

The 19th century philosopher and mathematician C. S. Peirce well understood the importance of the work of Cauchy, Weierstrass, and others in creating a foundation for analysis in a logically sound understanding of limits. Nevertheless, he found what he called the *doctrine of limits* unsatisfactory because he saw it as a nominalistic solution to the problem. Peirce felt that, in the light of the work of Cantor on the infinitely large, one could develop a consistent theory of the continuum using infinitesimals. Moreover, he thought such a theory necessary to an understanding time and consciousness. In this talk, I will discuss how Peirce's commitment to scholastic realism and his own pragmatism led him to the position of accepting infinitesimals as an essential reality of the continuum. (Received September 26, 2004)