

Undergraduate Colloquium in Mathematics

Illinois State University

1:00–1:50 PM CST, September 2nd, 2021

Speaker: Paul Musial, Chicago State University

The HK_r -Integral is Not Contained in the P_r -Integral

Abstract: There are three equivalent integration processes that recover a function from its derivative. Two of them, the Perron integral and the Henstock-Kurzweil integral, have been extended to integrals that recover a function from its L^r -derivative (we will define this in the talk). The surprising result is that the two extended integrals are not equivalent to each other; that is, they don't integrate the same functions. We will also discuss open problems that arise in the study of these integrals. Joint work with F. Tulone and V. Skvortsov.

Biography: Paul Musial is a professor of mathematics at Chicago State University. He received his Ph.D. from the University of Illinois at Chicago. He heads the Actuarial Program at Chicago State. He teaches real analysis, probability and statistics, abstract algebra and many other mathematics classes. He has written several papers in real analysis. He is married and has two children.

