

Young Mathematicians Conference 2021

The Ohio State University, August 20-22, 2021

On the conjugacy problem in a variant of the well-known Thompson Group

John M White (white.3045@osu.edu)

The Ohio State University [Mentor: Sergei Chmutov]

Abstract of Report Talk: The well-known “Thompson Group,” which we denote F_2 , is the group of continuous, piecewise-linear self-homeomorphisms of the $[0, 1]$ interval, which are differentiable everywhere except a finite set of dyadic rationals (rational numbers whose denominator is a power of 2), and such that, where it exists, the derivative is always an integer power of 2. By changing this definition so as to keep everything the same but with threes instead of twos, we arrive at an object we denote F_3 .

In their 2008 paper, Belk and Matucci solve the conjugacy problem for F_2 using so-called “strand diagrams”. In his 2018 paper, Jones demonstrates connections between F_2 and F_3 in terms of “tree diagrams” which are closely related to strand diagrams. In this presentation we generalize Belk and Matucci’s methods to solve the conjugacy problem in F_3 . [\[WJ05185309\]](#)

[Joint with Dr. Matt Harper, Dennis Sweeney, Torey Hilbert, Alexander Patterson]

Received: August 17, 2021