1125-57-1126 **Stephen Lo***, Department of Mathematics, The University of Auckland, Private Bag 92019, Auckland, Auckland 1142, New Zealand. *The symmetric genus of metabelian groups.* Preliminary report.

The *symmetric genus* of a finite group G, denoted by $\sigma(G)$, is defined as the smallest non-negative integer g such that there exists a compact Riemann surface of genus g on which the group G has a faithful action as a group of automorphisms, some of which may reverse the surface's orientation. A natural question to ask is whether, for each non-negative integer g, there exists a finite group G such that $\sigma(G) = g$. It is known that the answer is "yes" for all $g \not\equiv 8$ or 14 (mod 18), and there is evidence that some of the remaining gaps in the spectrum (range of values) of the symmetric genus can be filled by considering finite metabelian groups. Our research aims to determine the symmetric genus of various families of finite metabelian groups, starting with metacyclic groups. In this talk, we will describe the method of determining the symmetric genus of finite groups using the Riemann-Hurwitz equation, which allows us to treat the problem as a purely algebraic one. We will also present results for some families of metabelian groups that we have considered, including metacyclic split extensions of the form $C_m : C_p$ where p is a prime. (Received September 15, 2016)