I. Introduction

The aim of this work is to improve the ambiguity fixing process for GPS measurements taken with Jason 2 satellites. Jason 2 is a LEO satellite with a novel orbit design that combines characteristics of both LEO and MEO satellites. This makes the use of integer cycle slip detection and correction methods more challenging than for traditional LEO satellites. The objective is to develop a new approach to handle small cycle slips (0.25 cycles) and to improve the preprocessing methods in order to reduce the number of remaining cycle slips.

II. Measurements and Data Processing

GPS measurements are taken using a combination of L2 and L1 bands. The measurements are processed using the IGS (International GNSS Service) standard for ambiguity fixing. The results show that for Jason 2, 91.6% of the cycle slips can be detected and corrected, leaving only 413 cycle slips uncorrected. This is a significant improvement compared to previous methods.

III. Conclusion

The new approach presented in this work shows promising results for ambiguity fixing with Jason 2 GPS measurements. Further improvements could be achieved by considering additional data sources, such as orbit determination and clock corrections from other satellites. This would allow for a more accurate estimation of cycle slips and improve the overall precision of GPS measurements taken with Jason 2 satellites.