THOMPSON RIVERS UNIVERSITY

Fusion Energy: General Fusion

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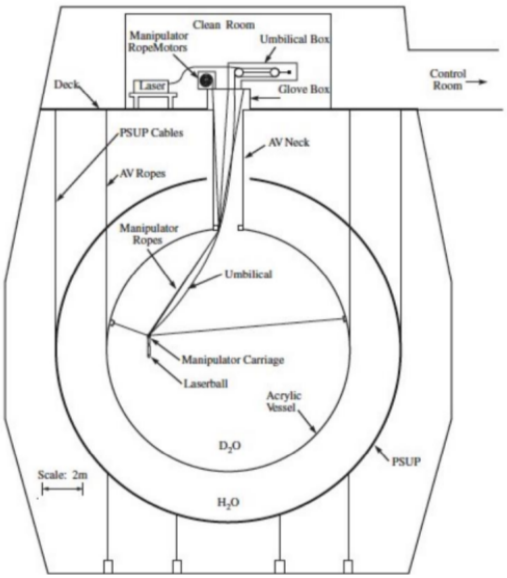
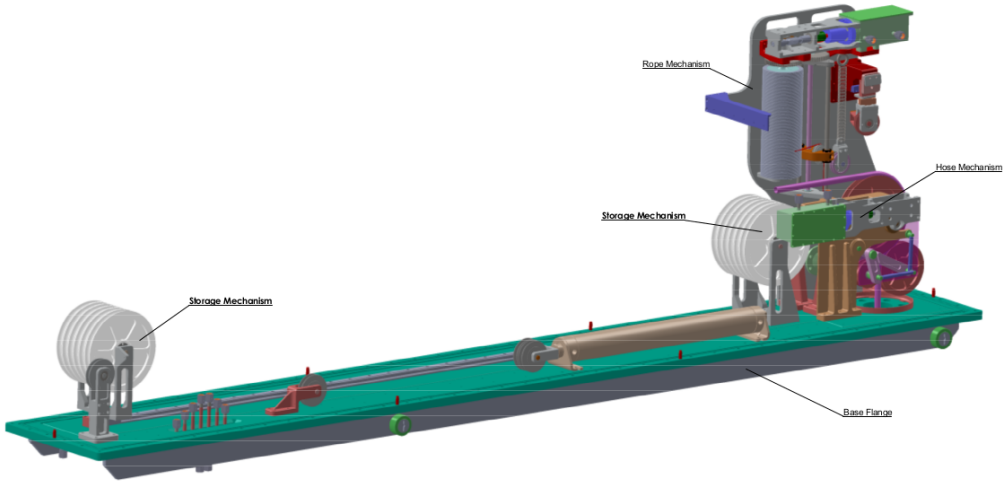
Overview

URM Function

Controls the deployment and storage of the source umbilical for the SNO+ detector

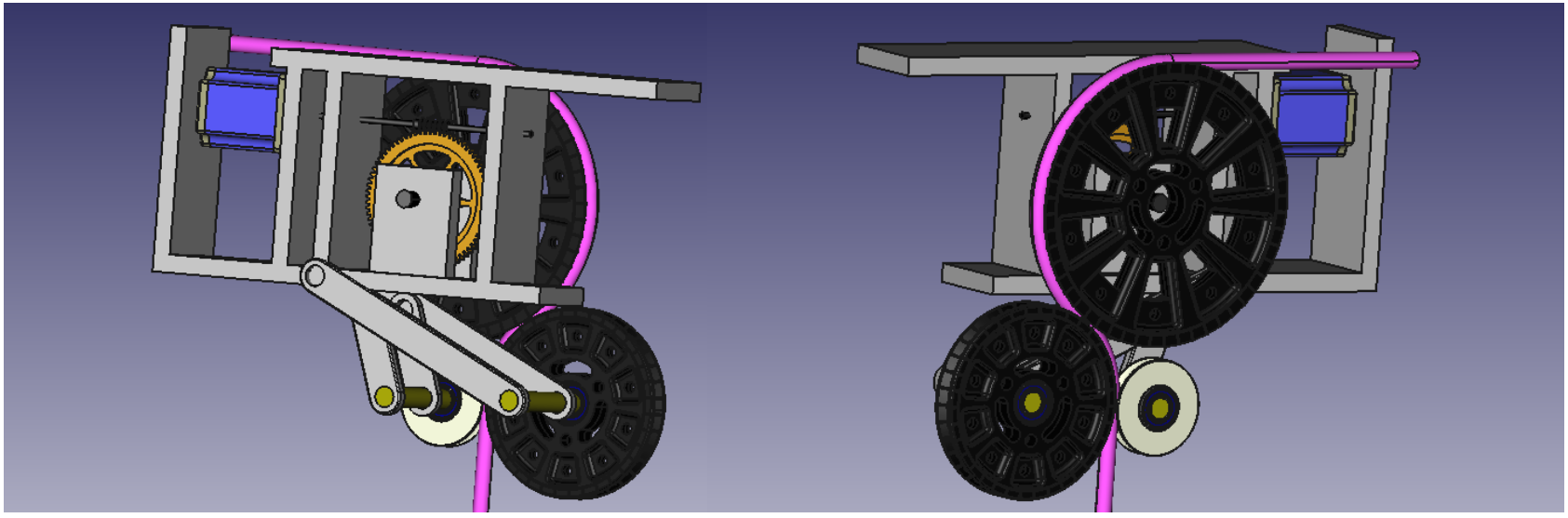




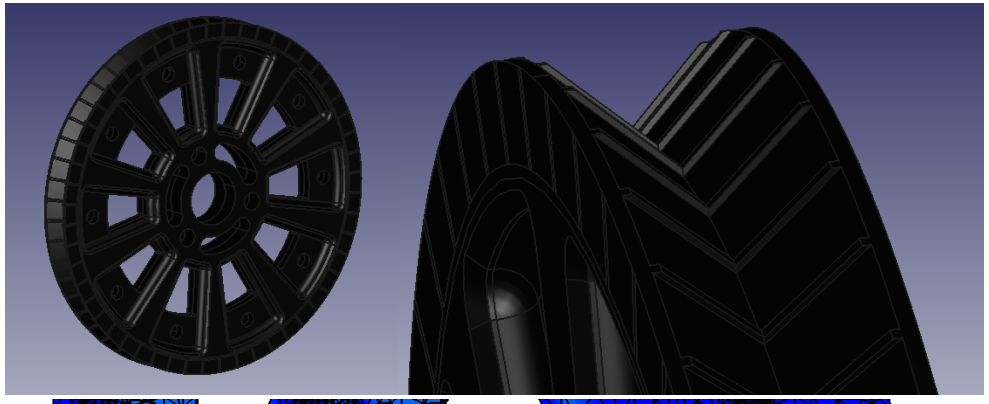
URM Problems

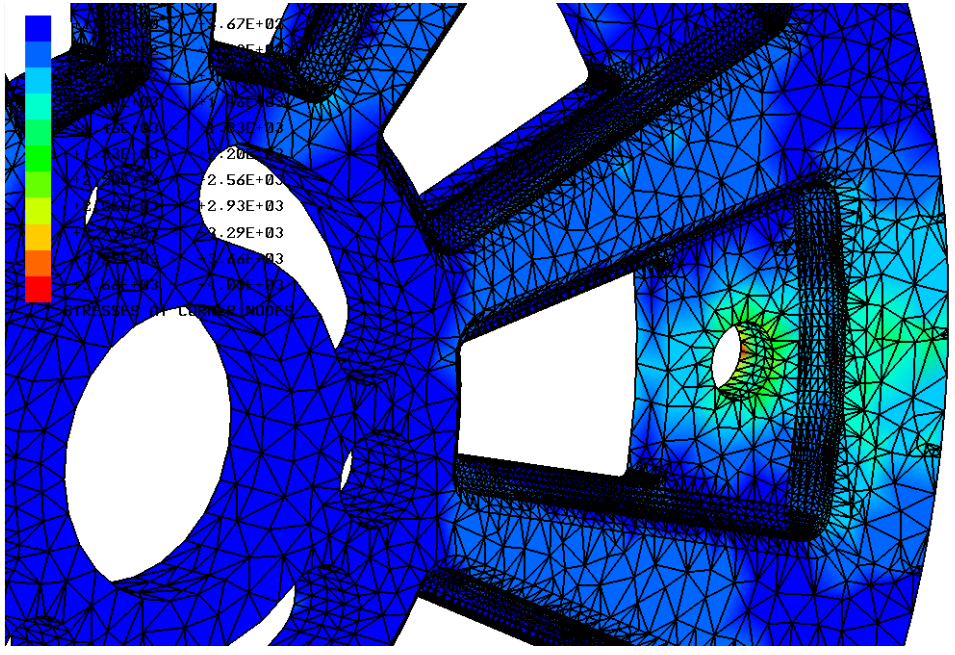
Sources of Slippage:

1. LAB for Scintillation (low coefficient of friction)
2. LAB compatible umbilical
3. Pulley Design (collects LAB reducing friction)
4. Umbilical Storage System (Pneumatic Cylinder)

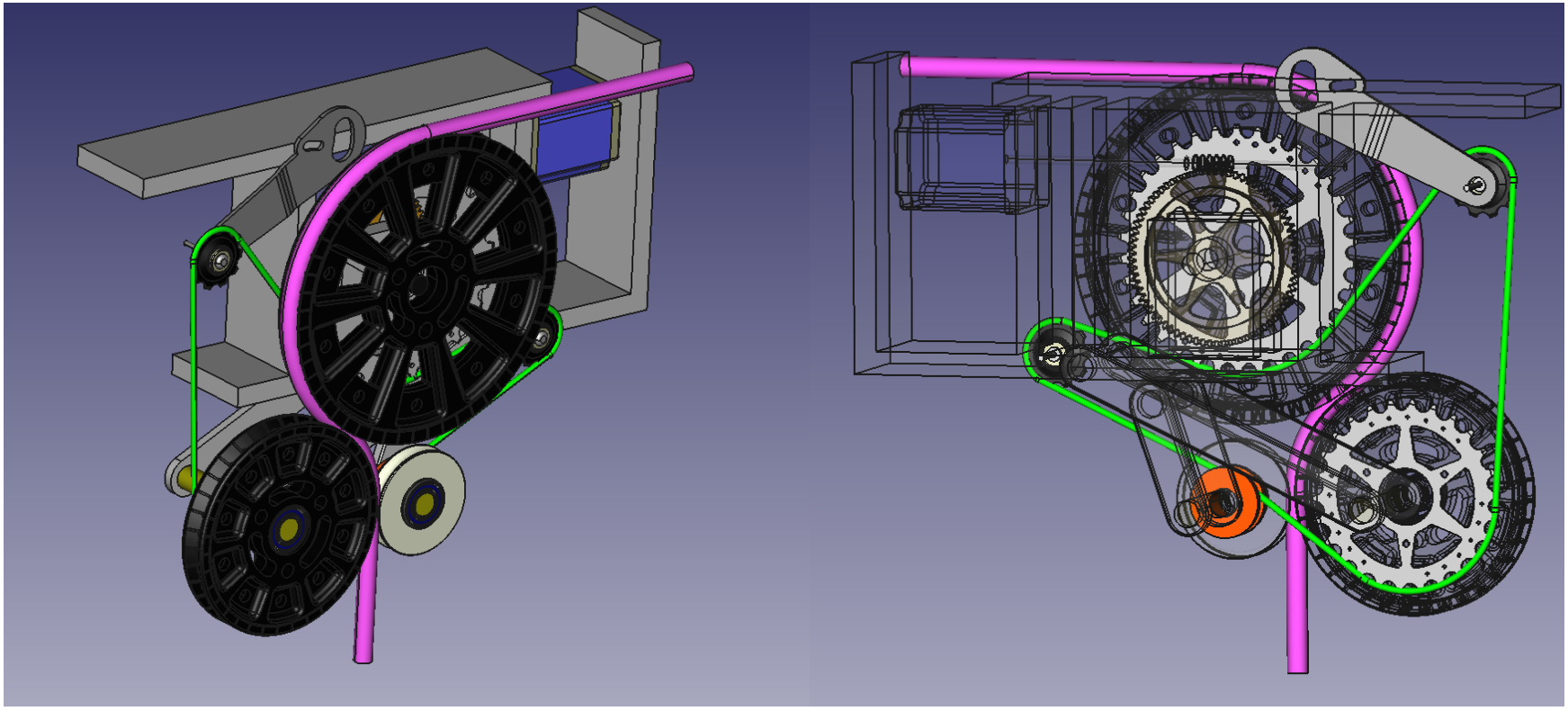


The Drive Pulley Design

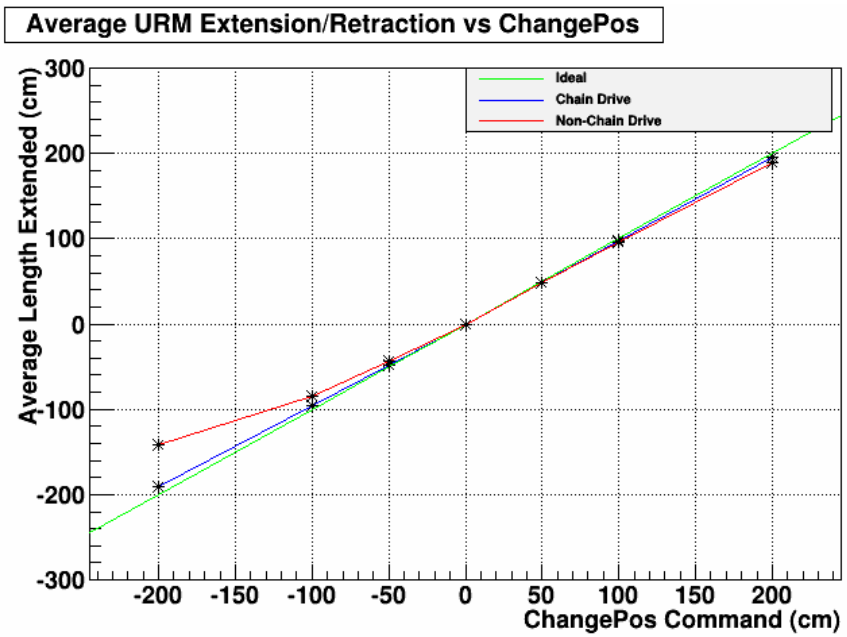


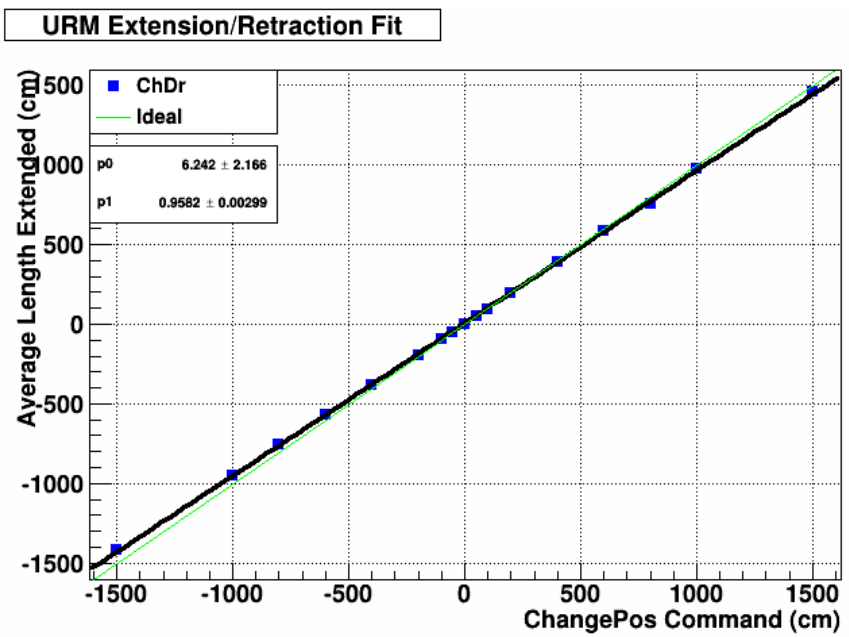


Chain Drive Design

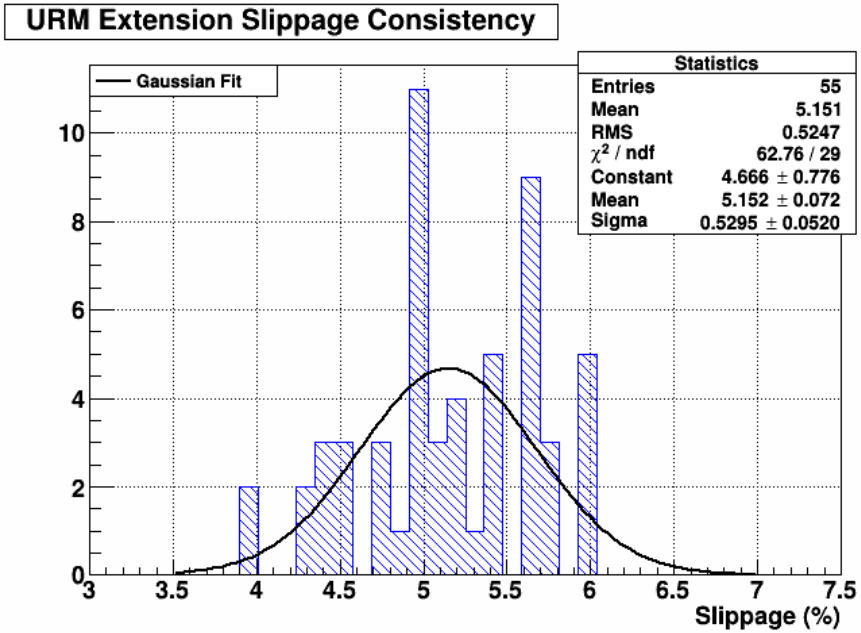


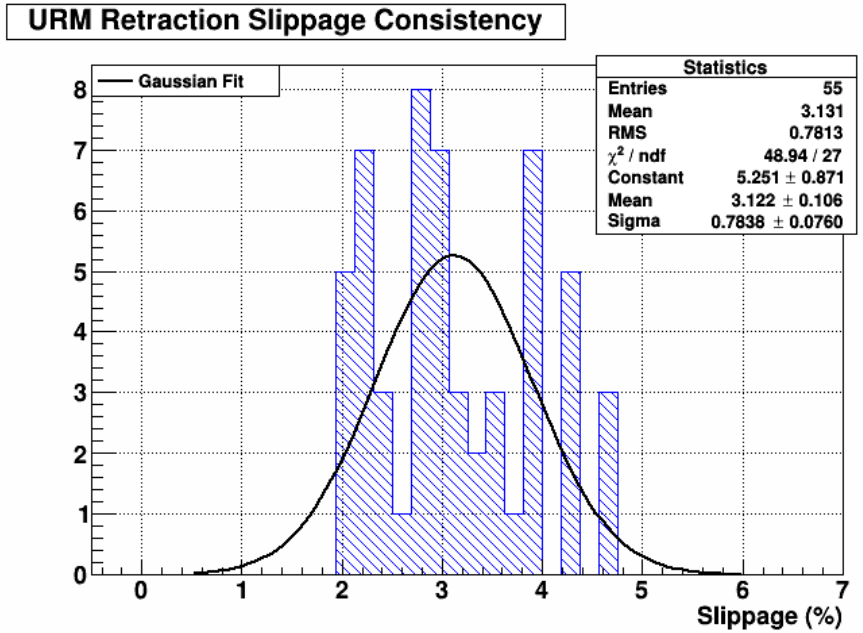
Chain Drive vs Non-chain drive

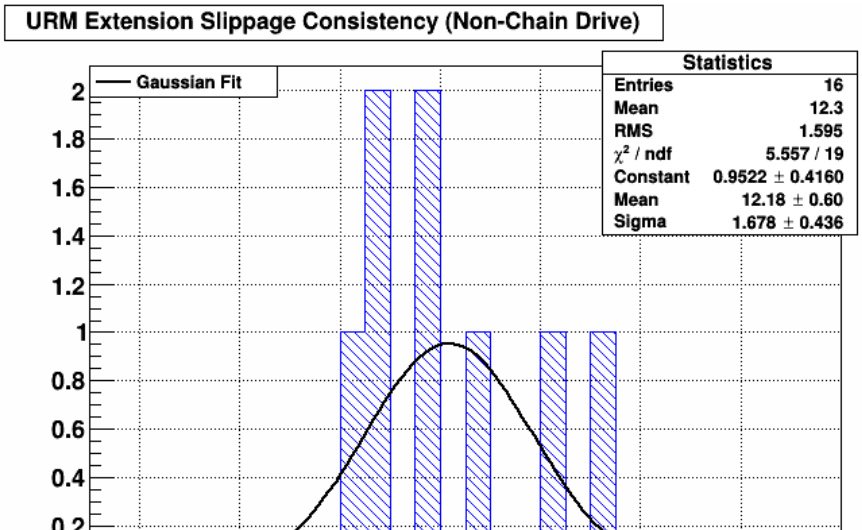


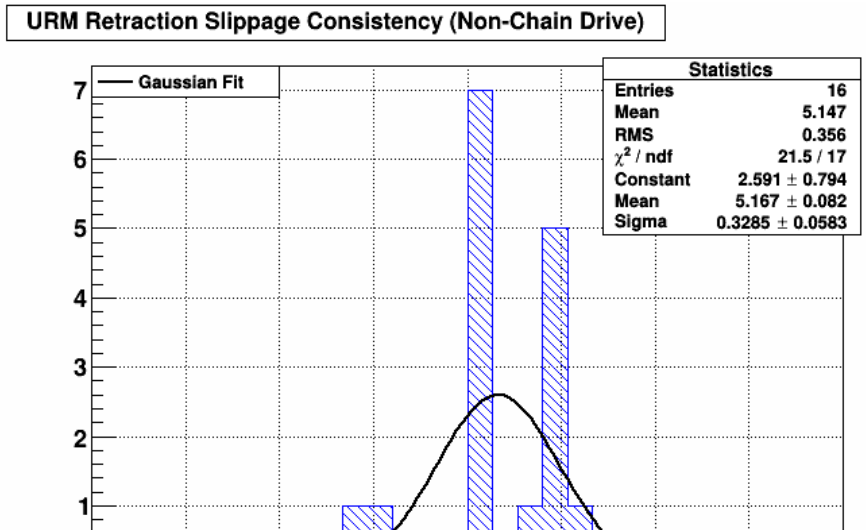


Chain Drive Consistency

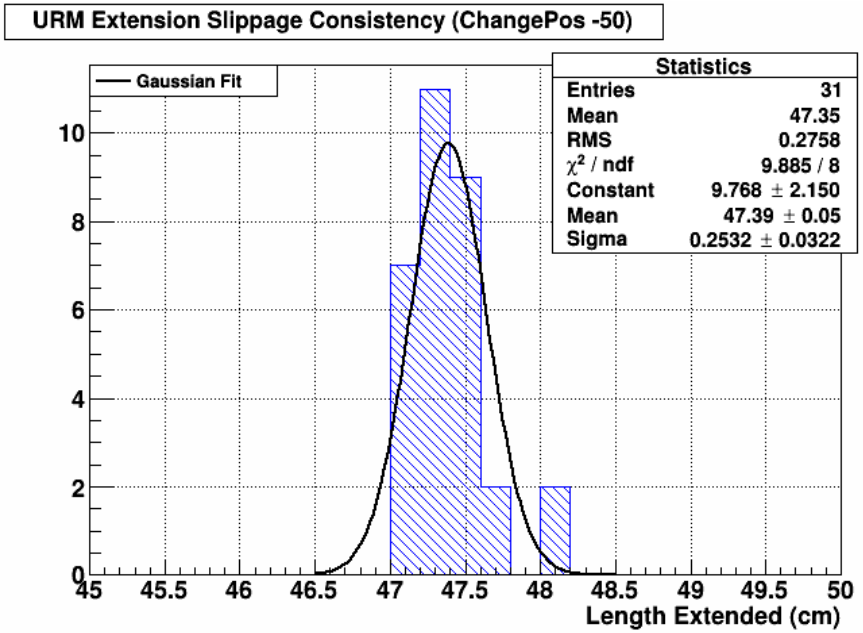


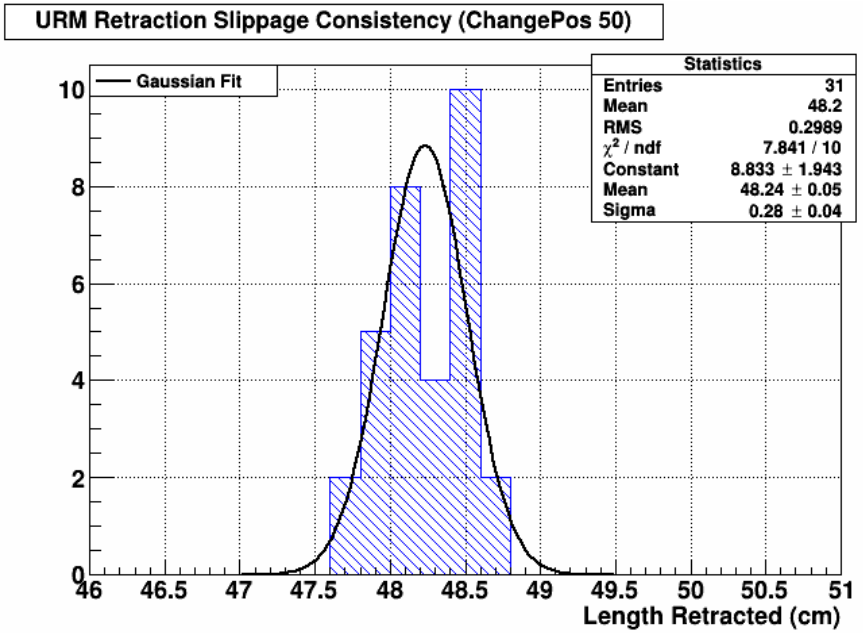


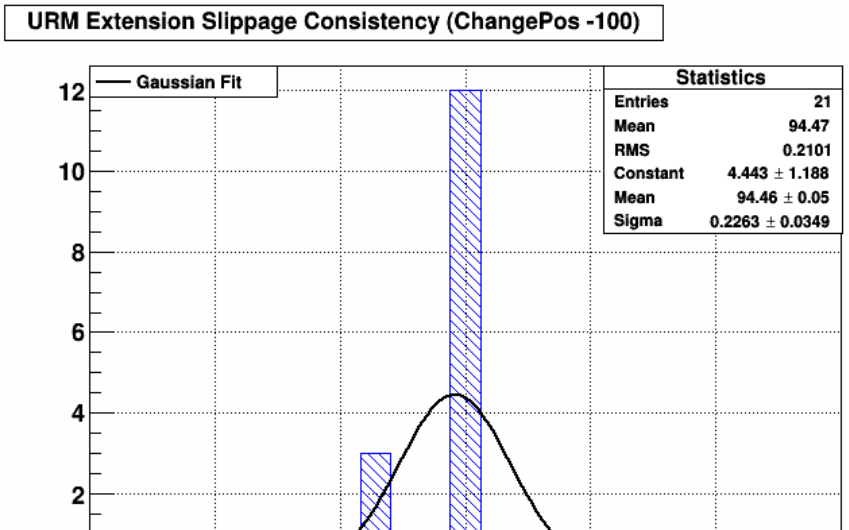


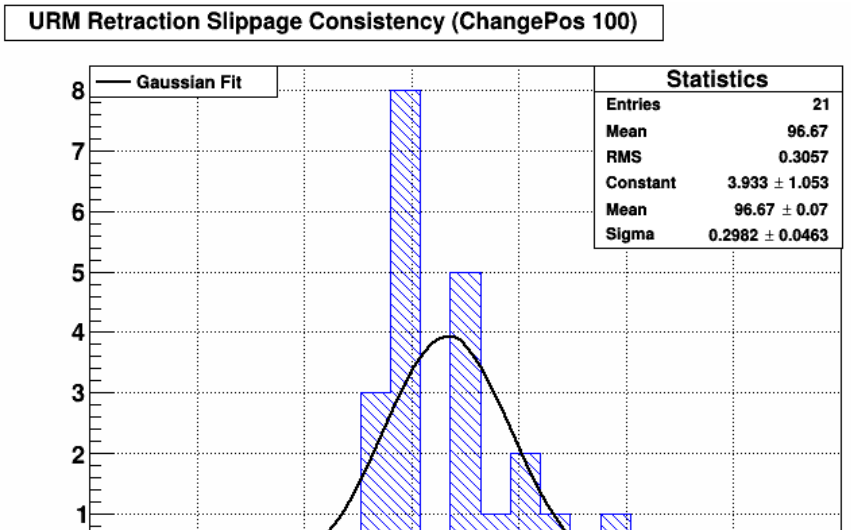


Chain Drive Consistency

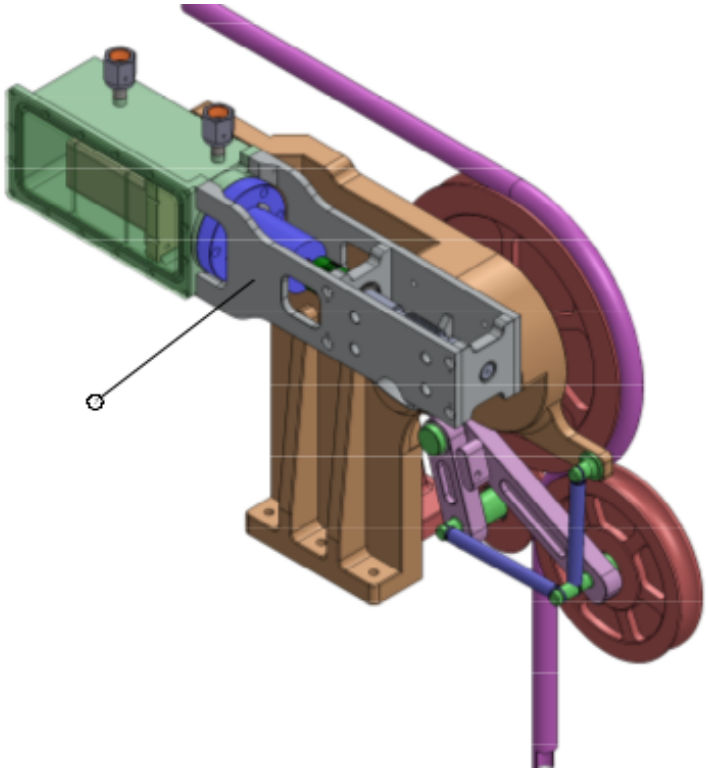


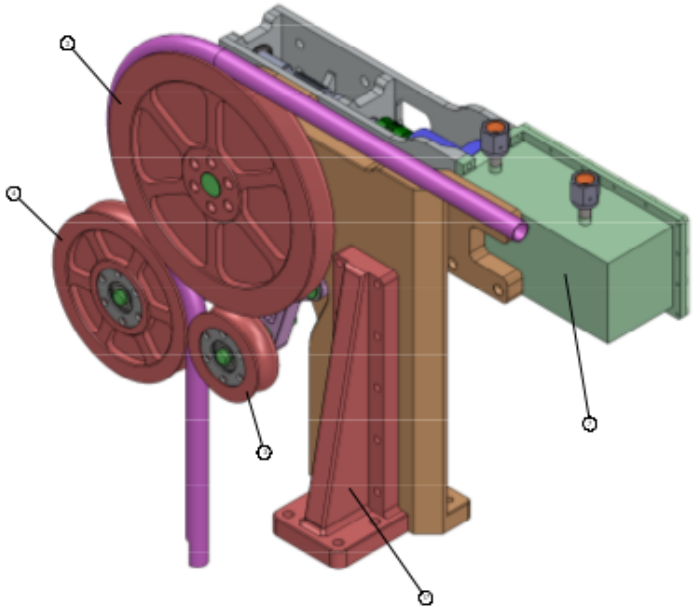




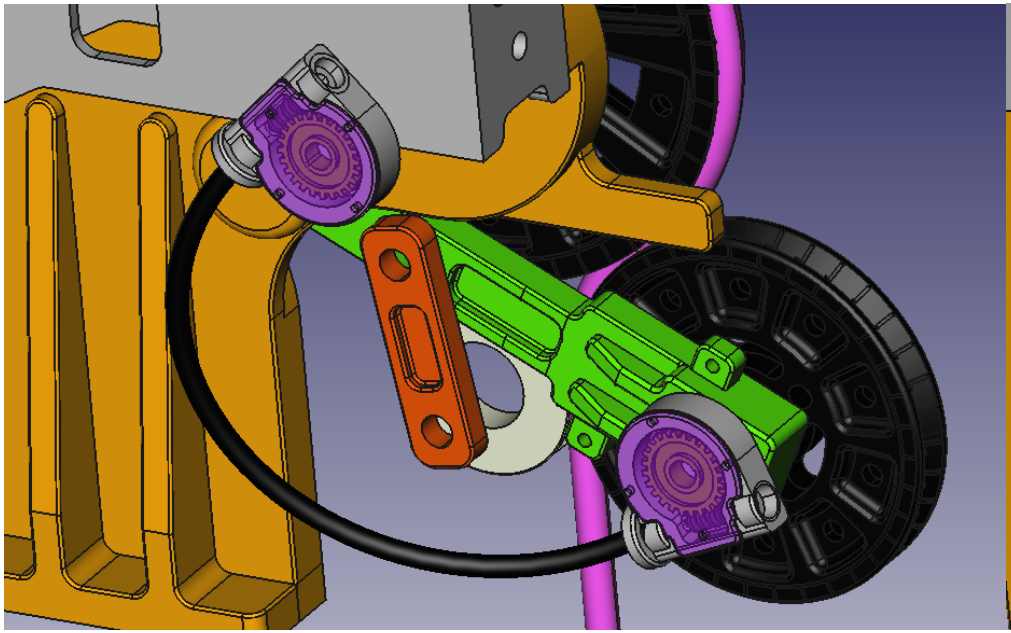


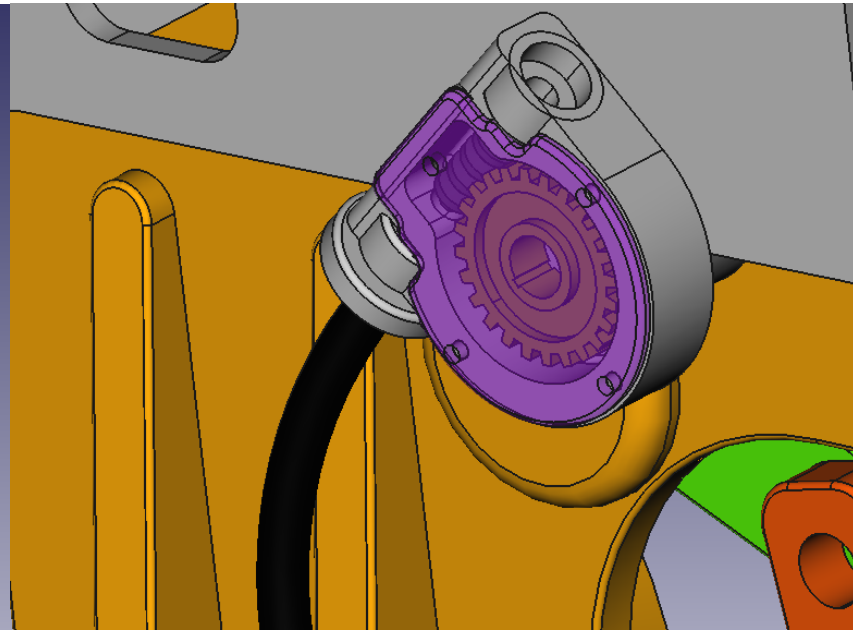
New URM Design

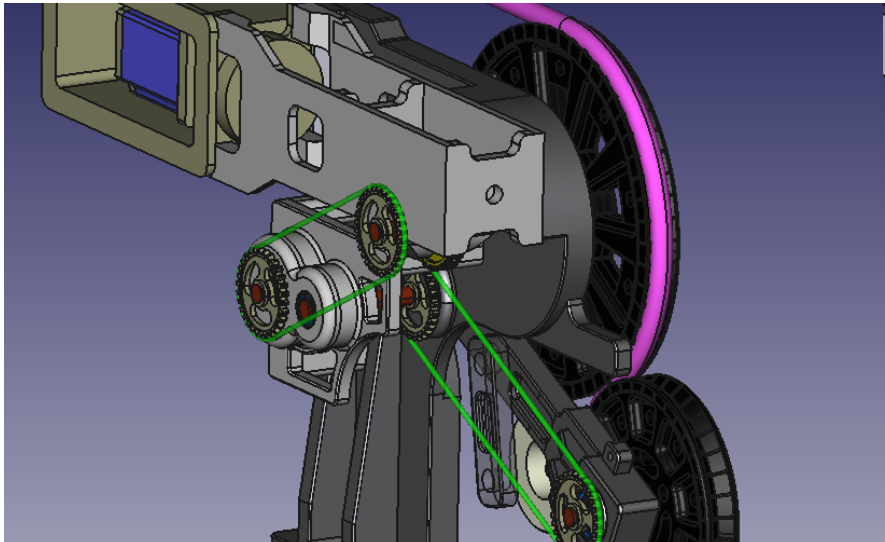


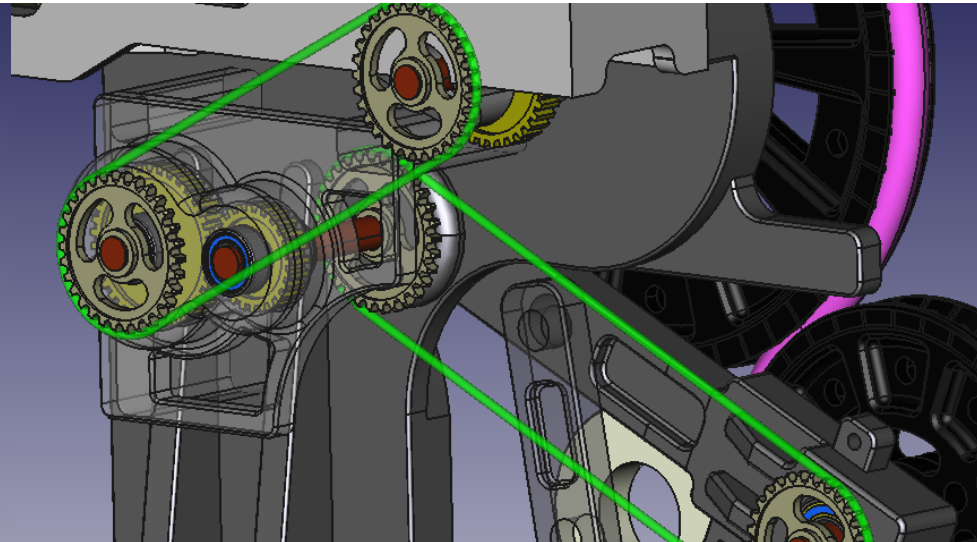


Flex Drive and Gear/Chain Drive









Future Goals

Next Steps:

1. Investigate the possible Improvements of driving small pulley
2. Complete LAB application system
3. Investigate Implementing Drive System to new URM design

References


Lawrence Garcia (2014)
Umbilical Tests and Detector Data Analysis


Jose Maneira, Rui Alves (2013)
URM design for SNO+, LIP-Coimbra

Thank-you