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THESIS PROSPECTUS: NOVEL METHODS OF WAVELENGTH  
CALIBRATION FOR FIBER-FED RADIAL VELOCITY SPECTROSCOPY

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ABSTRACT

## 1. INTRODUCTION

## 2. MODAL NOISE MITIGATION

2.1. *Results from in-lab testing*2.2. *Development of EXPRES agitator*2.3. *Proposed EXPRES + LFC testing*

## 3. SPECTRO-PERFECTIONISM

3.1. *Point Spread Function Modeling*3.2. *Preliminary results using AlN microcomb and ThAr*3.3. *Comparison of modeled RV results*4. ELECTRO-OPTIC MODULATION AND ALUMINUM NITRIDE  
ASTROCOMB4.1. *Comb Optical Design*4.2. *Feedback controls and expected precision*4.3. *Comparison against Menlo LFC*

## 5. PROPOSED TIMELINE