

# Robot Control Algorithms Based on Sclera Force Information

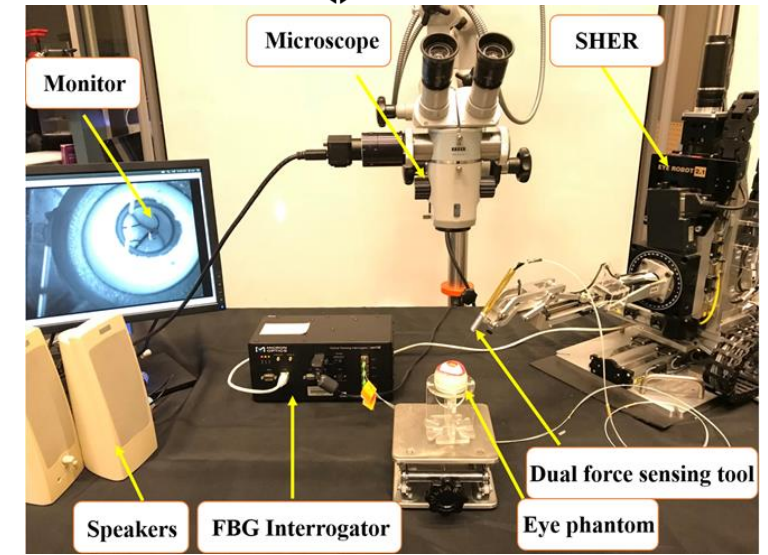
- Excessive forces on the sclera leads to corneal striae
- Robot-assisted retinal surgery diminish surgeon's perception of sclera forces

## • Methods

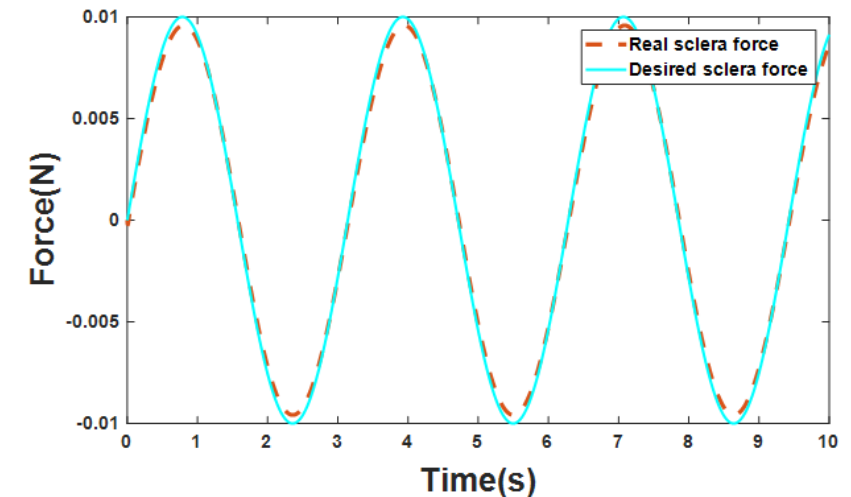
- Simulating the eye motion with a piezoelectric linear stage
- Performing the multi-user experiments with 10 users while providing auditory feedback to them with the moving stage (1)
- Applying an Adaptive Force Control algorithm (SIMULINK simulation)

## • Results

- Adaptive control makes the sclera force follow the desired signal (2)
- Users are able to manipulate in safe limits even when the linear stage is moving the eyeball



(1)



(2)

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