TITLE: Strain estimation methods in optical coherence elastography.

1. INTRODUCTION
   1. Introduction to OCE
      1. Applications and significance
      2. Need for processing speed ups
   2. Basics of OCE
      1. Description of OCT imaging technique
      2. Description of OCE techniques
      3. Specifics of this compression OCE system
      4. Measuring displacement (phase-sensitive OCE vs speckle / image correlation)
   3. Basics of strain estimation
      1. Reasons for linear displacement fit
      2. Phase wrapping
   4. Low pass digital differentiators
      1. Reasons for low pass filtering in strain estimation
      2. Least squares approach (including statistical basis of weights)
      3. Savitzky-Golay filtering
2. METHODS
   1. Standard unwrapping with WLS
   2. Unwrapping with SG filter convolution
   3. Phase offset with SG convolution
   4. Weighted finite difference with Gaussian smoothing
   5. System / data / samples / acquisition
3. RESULTS
   1. Image qualitative comparison
   2. Processing speed comparison
      1. Per B-scan (strain estimation only – fit length implications)
      2. Per C-scan (with and without file I/O overhead)
   3. Sensitivity/SNR comparison
4. DISCUSSION
   1. Optimum processing algorithm
   2. Further areas of investigation in strain estimation
   3. Implications for other areas of OCE