**Response to reviewer’s comments**

We thank the reviewer for his/her encouragement and constructive criticism. The reviewer made two major and several minor comments which we address in detail below.

**Major comments:**

1. The ultrasonic measurements. For those readers, not familiar with the ocular blood dynamics the ultrasound transducer could seem redundant, as similar measurement may be extracted from the A-scan of the retinal (i.e. longitudinal retinal apex displacements). The authors should justify the need/purpose of measuring with the ultrasound technique on the cornea.

We agree with the reviewer that the introduction of the ultrasound traducers in the measurements could have been more emphasized. We added the following paragraph on LCAD to the introduction of the revised paper:

“Of interest is also an accurate measure of longitudinal corneal apex displacements (LCAD). LCAD is a purely mechanical response to the blood pressure and ocular circulation that was found to be well correlated with cardiopulmonary signals. Hence, simultaneous measurements of LCAD with the retinal blood velocity might be helpful to assess influence of the ocular blood flow on the ocular pulse amplitude. “

1. STdOCT processing scheme. Based on the brief description provided, it appears that one RBFV measurement (single point) requires a 5,000 A-scans. Thus, if the system operates at 50,000 A-scans/per second. Effectively the RBFV is sampled at 10Hz, which is an order of magnitude lower than the LCAD, and almost four orders lower than ECG and Pulse. If this is correct, this low sampling is going to have an impact on the range of detectable frequencies (Nyquist). The authors should clarify this as well as justify why the analysis is performed on the 10Hz range?

Ad 2)

We agree with the reviewer, the RBFV was sampled at 10Hz. We have chosen the sampling rates of ECG, pulse, and LCAD signals to significantly increase the Nyquist frequency (a low-pass filter at 20 Hz was applied) and to interpolate the RBFV signals to avoid leakage of their computed spectra, particularly when the phase of the signals is concerned. Consequently, spectral information up to 5 Hz was available. We have updated Figure 3 to clarify this point.

1. The phrase: ?To obtain information about phase compliance between corresponding frequency components contained in two given signals, the coherence function was evaluated.? . The coherence function shown in Fig 4, seems to report coherence versus frequency but it is unclear what the ?phase compliance? referees to and where this is shown in the results. Also a bit more of description (or a reference) on the coherence function could help the reader.

To clarify this point, we added the following paragraph to the revised version of the paper:

“The coherence function is bounded between 0 and 1 and indicates the synergy between the two signals. The coherence of zero indicates that two given signal components at certain frequency are independent while if the coherence value is one, they are perfectly correlated (i.e., their phases change in time in the same way) [20].”

[20] Eadie AS, Pugh JR and Winn B (1995). The use of coherence functions in the study of ocular mechanism. *Ophthalmic and Physiological Optics*; 15:311-317.

**Minor comments:**

1. Figure 1. Ideally, the left eye should have the ?waves? inside the eye (retina), as it is retinal measurements and not corneal.

Done. Thanks for suggesting this.

1. Figure 2. typo in the legend (cornel)

Done. Thanks for pointing this out.

1. STdOCT processing scheme. The explanation lacks references (page 2, column 1). Acronyms that are used only once do not have to be defined. Example POBF and HRV.

The extraction of the RBF velocity from STdOCT is novel and no references are available.

We have removed the POBF and HRV acronyms. Thanks for pointing this out.

1. Although the setup may be suitable for the tested healthy subjects. It could be an issue (i.e. signal offset) to compare the left eye versus right eye dynamics/signals, specially on subject with ocular pathologies. The authors should reflect on that, based on their experience.

We added the following paragraph to the discussion of the revised paper:

“It is worth noting that the proposed method is limited to the healthy subjects without any oculomotor pathology (i.e., nystagmus). Plana are made to utilise the presented method to measure subjects with ocular and cardiovascular pathologies (e.g., diabetic retinopathy, macular degeneration or retinal artery and vein occlusion). Also, it is of interest to compare dynamics in two eyes but the current setup prohibits such studies. “