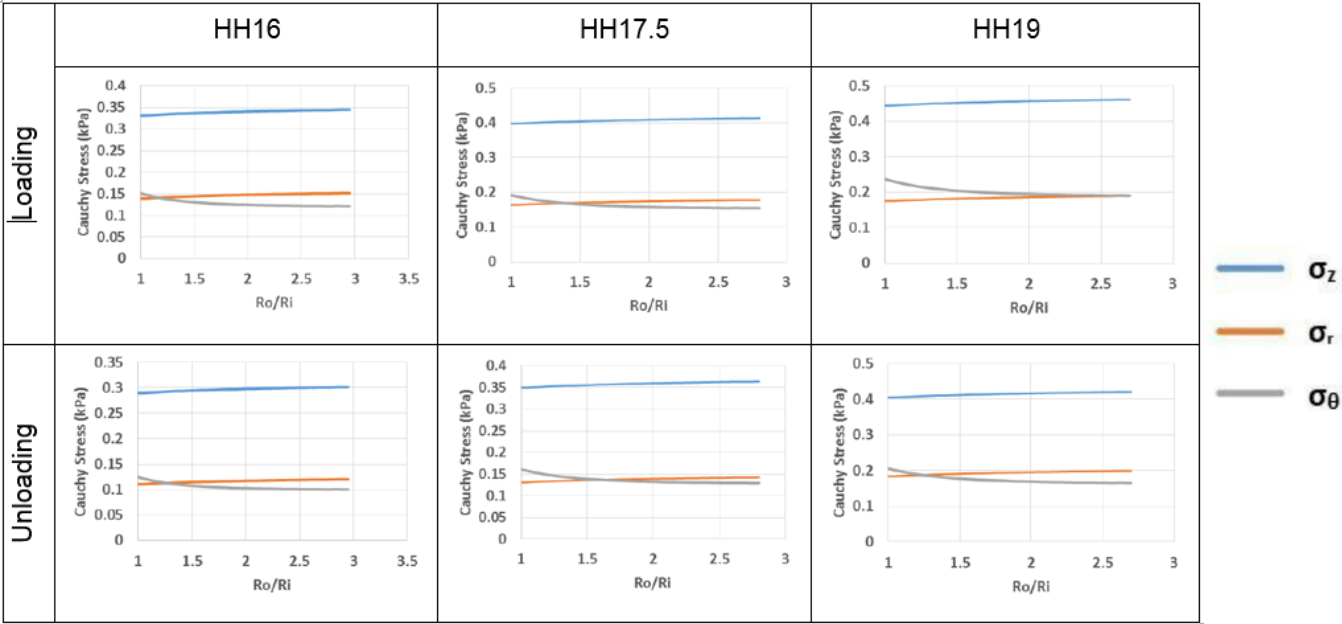
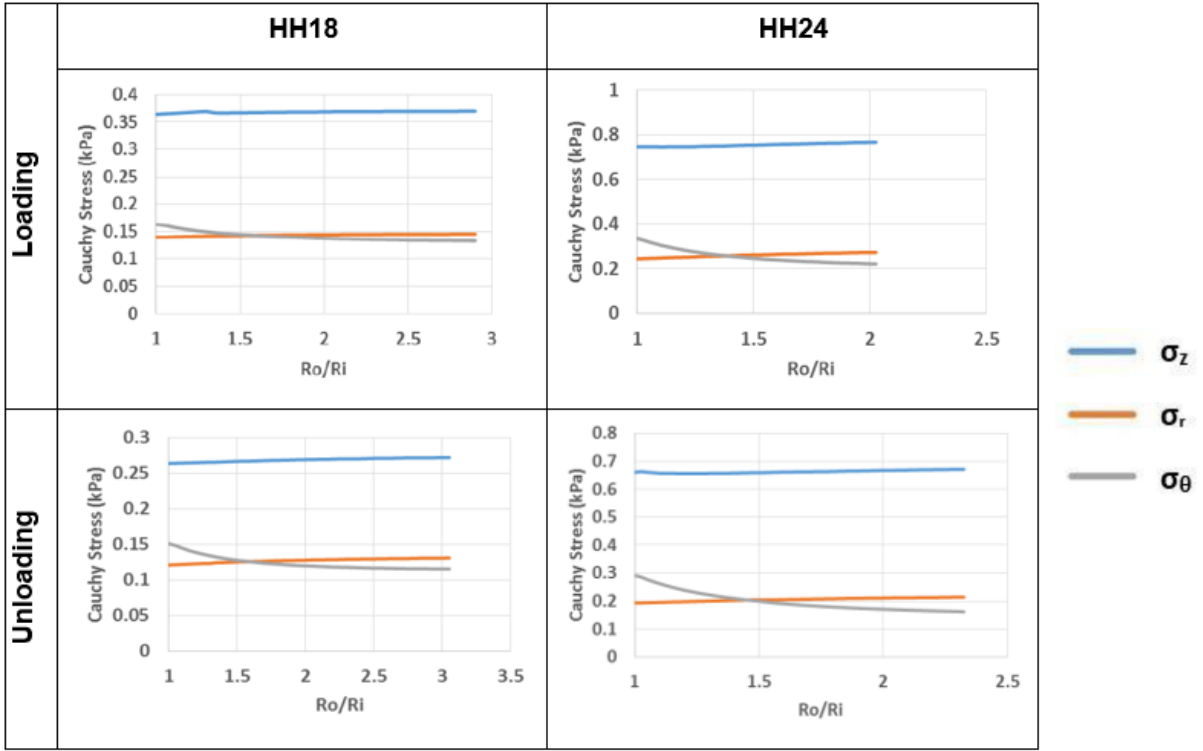


**SUPPLEMENTARY FIGURES**

**Figure S1:** Computed Cauchy residual stress values for the vitelline vessels in chick embryo at HH16, HH17.5 and HH19 during physiologic loading and unloading conditions. Representative of one of the 8 embryos. calculated using the methodology presented in Ref. [1].



**Figure S2:** Computed Cauchy residual stress values for the chick embryo fourth aortic arch at HH18 and HH24 during physiologic loading and unloading conditions. Representative of one of the 5 embryos. calculated using the methodology presented in Ref [1].



**Figure S3:** Stress strain relation for TOP: the vitelline vessels in chick embryo at HH16, HH17.5 and HH19 during physiologic loading and unloading conditions. Representative of one of the 8 embryos. **BOTTOM:** fourth aortic arch in chick embryo at HH18 and HH24 during physiologic loading and unloading conditions. Representative of one of the 5 embryos.

