**Reply to Reviewer #A:**

**Comment 1.** Line 14, Before first abbreviation HETP, full name must be given.

**Reply 1. Thanks for your note. It was corrected in the revised manuscript according to your comment (page 1).**

**Comment 2.** Line 80, CO2, 2 should be written as subscript.

**Reply 2. Thanks. It was corrected in the revised manuscript based on your comment (page 3).**

**Comment 3.** Lines 234, 235, Properties $ρ\_{l} and ρ\_{w}$ must be detailed explain. Why the article $\left(\frac{ρ\_{l}}{ρ\_{w}}\right)^{0.5} $was introduced in expression for Y?

**Reply 4. According to your note, the properties** $ρ\_{l}$ **and** $ρ\_{w}$ **were explained in detail in the revised manuscript (page 10). This is also to notice that the term of  was introduced and used in the expression of Y due to omission of the operational liquid density effect. In other words, the aforementioned term was utilized in order to plot a GPDC in which the effect of specific operational liquid in the column is removed (GPSA engineering data book, 12th edition, 2004).**

**Comment 5.** Line 259, 327: Diameter of column was 39.5 mm, not 40 mm.

**Reply 5. Thanks for your comment. It was corrected in the revised manuscript according to your comment (pages 12, 15).**