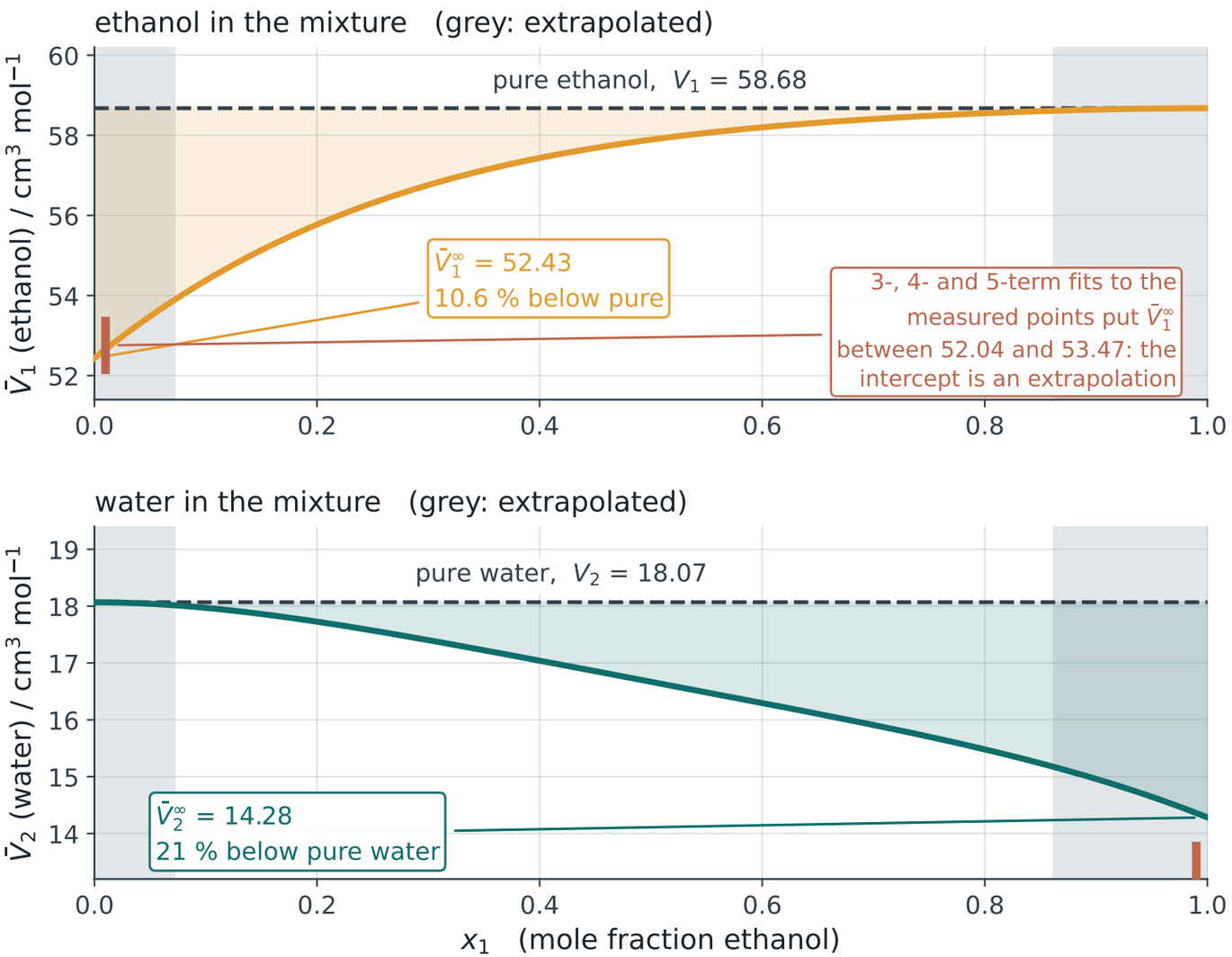
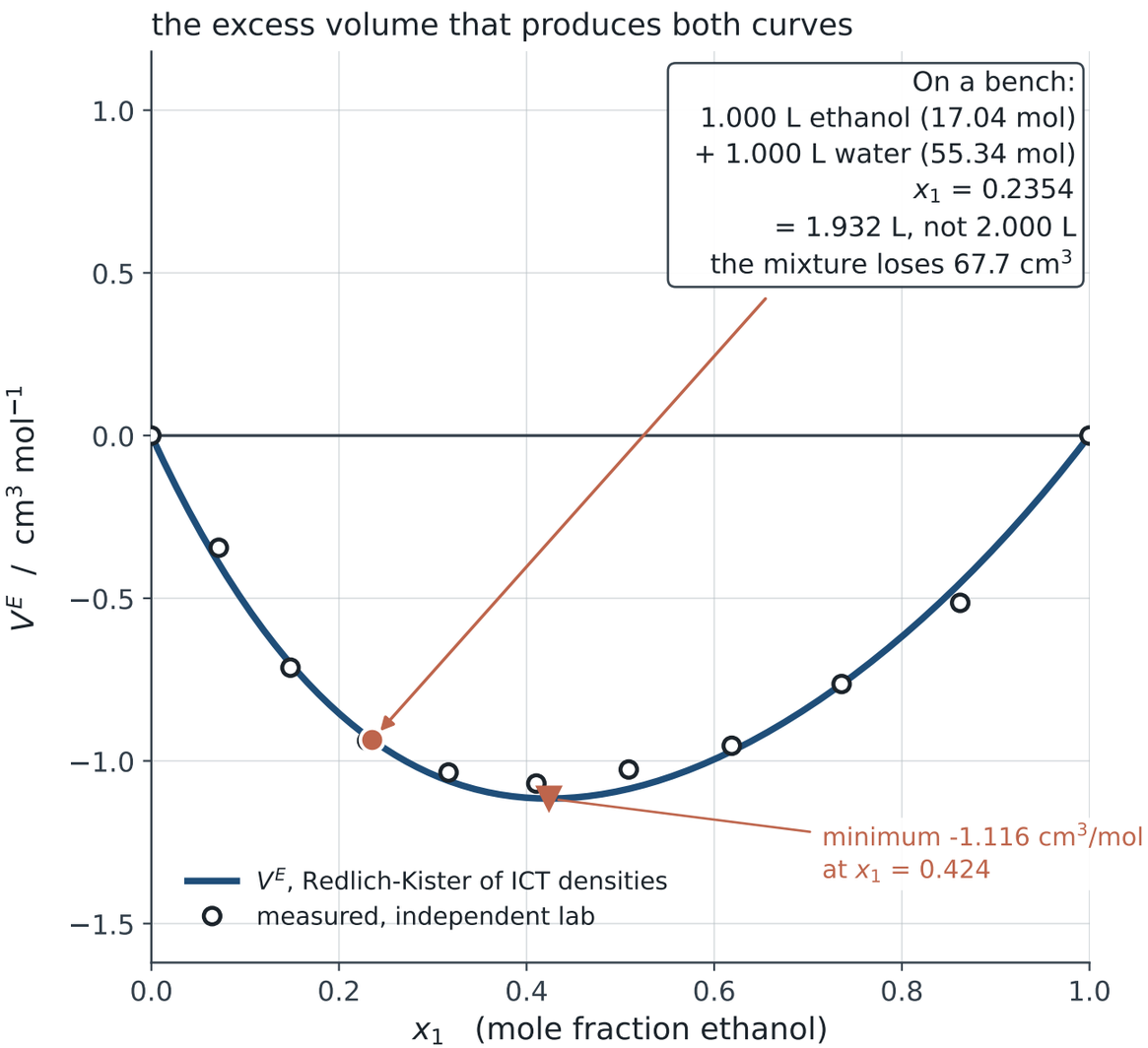
A partial molar volume is not the molar volume of the pure substance — and it is not even close

ethanol (1) + water (2) at 298.15 K; dashed lines are the pure-component molar volumes





MEASURED DATA. V^E from the Redlich-Kister correlation of Danahy, Minnick & Shiflett, *Fermentation* 2018, 4(3), 72 (open access), regressed on >700 measured density-composition points from the International Critical Tables; validity 283.15-313.15 K, 0-100 wt%. Circles: Pawar & Aher, IJSRSET 2017, 3(6), 432-447, Table 2.
EXTRAPOLATED, AND LABELLED AS SUCH: no measurement exists below x_1 = 0.0719 or above x_1 = 0.8622 (shaded). Refitting the measured points with 3, 4 and 5 Redlich-Kister terms moves $\bar{V}_1^{\infty}$ over 1.43 cm³/mol and $\bar{V}_2^{\infty}$ over 1.15 cm³/mol (red bars). Pure V_1, V_2: `thermo` HEOS_FIT.