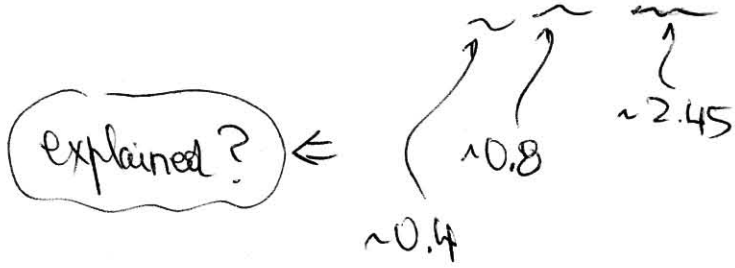
EME 580 Name: LRR

Quiz 2

On the basis of your reading of the relevant literature, indicate whether the following statements are true or false and briefly document/justify your selection.

F Figure 1 in the paper of Al-Dousari and Garrouch (2013) illustrates the "oil recovery at 0.75, 1.5 and 2.25 pore volumes injected".



F T F Al-Dousari and Garrouch (2013) do not discuss the significance of breakthrough time, but they do provide at least one reference in which the concept of "breakthrough dimensionless time" is explained.

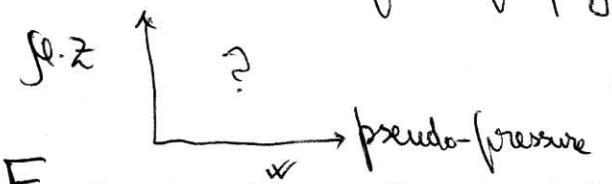
? ⇒ "... an immediate breakthrough because the initial oil saturation is greater than the residual oil saturation. The physics controlling water breakthrough do not ..."

? ⇒ t_{Do} → "oil breakthrough" — Explained? → Ref ??

T Intriguingly, Stumpf and Ayala (2016) concluded that "Arps' hyperbolic exponents (b) are directly controlled by the intrinsic fluid property α", even though α is a pressure-dependent fluid property.

OK! !?

Can an 'intrinsic' fluid property be pressure dependent? (What is meant by 'intrinsic'?)



⇒ unlike $z = \frac{pV}{RT}$, α vs. p_r depends on T_r (!?)

F From the useful case studies analyzed by Stumpf and Ayala (2016) there emerges a straightforward correlation between the mean value of α and the initial-decline dimensionless exponent.

	$\bar{\alpha}$	b_i
Case 1:	0.4854	0.4805
+ 2:	0.7901	0.7111
+ 3a:	0.6171	0.6171
3b:	0.6772	0.4740

	$\bar{\alpha}$	b_i
Case 3c:	0.7343	0.2937
+ 4:	0.6804	0.3863
5:	0.5620	0.5520
6:	0.7929	0.7795

↑ No!

⇒ explanation?

⇓

Figure? (No!)

lrr3@psu.edu (last modified 02/06/2018)