

# Similarity Indices (SI) for Evaluating Drainage in Resource Plays

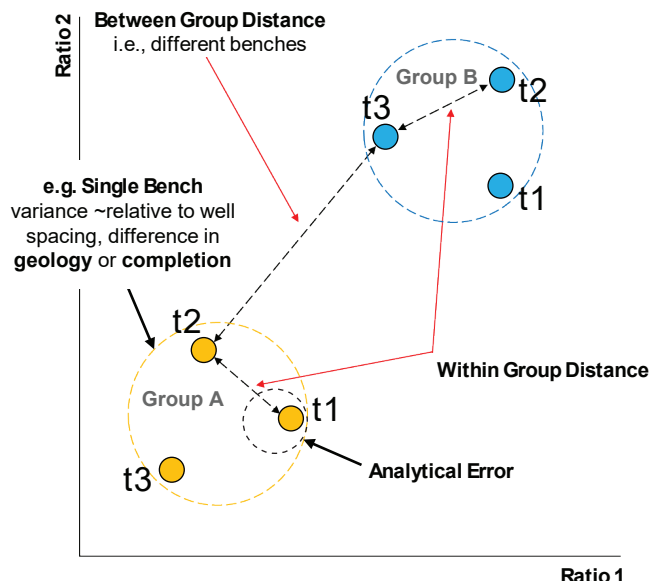
Similarity indices (SI) can be utilized on production oils for **semi-quantitative** drainage evaluation, where quantification to a baseline is not possible. This allows operators to gain insight into production drainage networks, overlap and spacing/stacking optimization through time.

## What is Implied:

- Similar Values → Draining the same chemical composition, similar zones, drainage height.
- **BUT**, do not know exactly which intervals are drained or their proportions.

## Information Derived:

- Drainage upwards or downwards through time.
- Spacing information.
- Diagnostic monitoring tool (EOR, completion Δ, etc.).



## APT Similarity Table (Single Time Stamp)

		Group A Wells			Group B Wells			Group C Wells	
		Group A t1	Group A t2	Group A t3	Group B t1	Group B t2	Group B t3	Group C t1	Group C t2
Group A Wells	Group A t1	0.00	0.17	0.38	0.65	0.60	0.72	0.85	1.00
	Group A t2	0.17	0.00	0.25	0.56	0.50	0.61	0.75	1.00
	Group A t3	0.38	0.25	0.00	0.36	0.32	0.39	0.56	0.88
Group B Wells	Group B t1	0.65	0.56	0.36	0.00	0.09	0.13	0.27	0.45
	Group B t2	0.60	0.50	0.32	0.09	0.00	0.16	0.30	0.45
	Group B t3	0.72	0.61	0.39	0.13	0.16	0.00	0.24	0.48
Group C Wells	Group C t1	0.85	0.75	0.56	0.27	0.30	0.24	0.00	0.19
	Group C t2	1.00	1.00	0.88	0.45	0.45	0.48	0.19	0.00

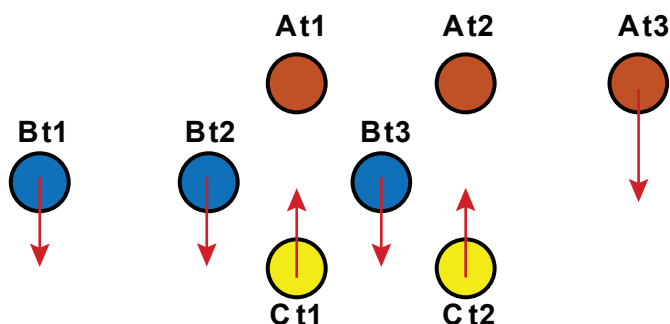
## Qualitative Evaluation

- **Green** = Analytically identical. Possible overlap of drainage, below analytical uncertainty.
- **Orange** = Possible overlap of drainage.
- **Red** = No overlap of drainage.
- **Red Arrows** = Drainage direction.

## Spacing & Stacking Decisions

Spacing may be too close. Drainage is deeper where stacking differs. →

Do you need only one layer? —



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