Reservoir Surveillance

An easy-to-use workflow inside of studioSL that is ideal for mature flood management. Quickly go from measured production-injection data to standard reservoir surveillance metrics. Compute well-pairs, injector patterns, sweep metrics, and rate targets.

Reservoir surveillance of production/injection data is fundamental to:
- Identify injector patterns
- Quantify pattern performance metrics
- Recognize areas of excessive fluid cycling
- Enhance the efficiency of injected fluids

Reservoir surveillance relies on the proper calculation of well rate allocation factors (WAFs). Compute WAFs using 3DSL, our streamline simulator, by specifying:
- Well locations
- Historical well rates
- Basic geological flow units

Quickly build surveillance models by importing production data and well locations from OFM, geoSCOUT, or Accumap. Create simple 2D or complex 3D grids based on geology and well locations.

Import well locations and build a grid in studioSL.

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1. From the streamline paths, extract flow-based allocation factors. Allocation factors vary through time and can be used to identify weak and strong well-pairs for every injector pattern at any timestep. Allocation factors are visualized using Streamsim's patented FPmap (US Pat. 6,519,531).

2. Once well-pairs and allocation factors are computed, studioSL can display the performance of each injector on an injector efficiency plot directly quantifying the oil production each injector is responsible for.

3. As a final step, use studioSL's floodOPT workflow to compute new well rate targets from the flow-based allocation factors. The new rate targets promote fluid sweep and reduce fluid cycling.

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