Data Sheet: DCA Autocast Engine

The DCA Autocast Engine performs decline curve fitting and forecasting against all wells in your production database, using 10 state-of-the-art decline curve models. The configurable engine can be scheduled to run at your convenience, resulting in ten (10) EUR estimates for each of your wells.

OVERVIEW

The DCA Autocast Engine will provide the ability to batch forecast all wells in the US. This executable engine, performs automated fitting of production records for any and all wells in a company's database, using any or all of the ten (10) available decline models.

This fitting engine populates the database with best fit parameters for each model, as well as EUR, CUM, and quality-of-fit values. Time and rate pairs (monthly values for 40 years) for each best fit curve are also stored in the database.

This data may be accessed for use and further analysis in any tool available to the client (e.g. Excel, Spotfire, Tableau, PowerBI) or any other application that can connect to an SQL Server database. Ability to select a subset of wells in your database, by State, County, Basin, and Field. Wells can be further sub-selected by marking on a map.

b

- For all selected wells, time normalized production data is plotted on log scale as points in a scatterplot. Resulting decline curves are superimposed against the production data for all 9 available decline models. Chart can be trellised to show multiple wells / fitting results at a time by selecting multiple / all / single wells from dialog.

- Box plot shows distribution of fitting result parameters (e.g. EUR, goodness of fit, IP) as a function of the different decline models. This chart can be used to observe which decline models characterize the data best, as well as identify fitting outliers, and determine which decline models represent up-side and down-side (bounding) cases for EUR.

- Bar chart shows similar information as Box Plot, but in a simpler format where each bar represents the fitting result parameter of interest, compared across the different decline models.
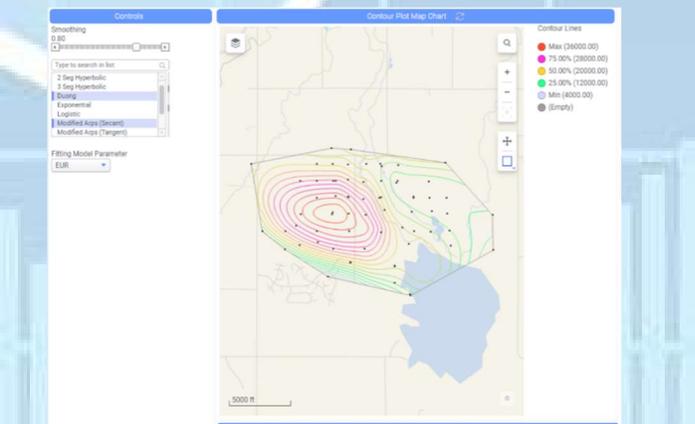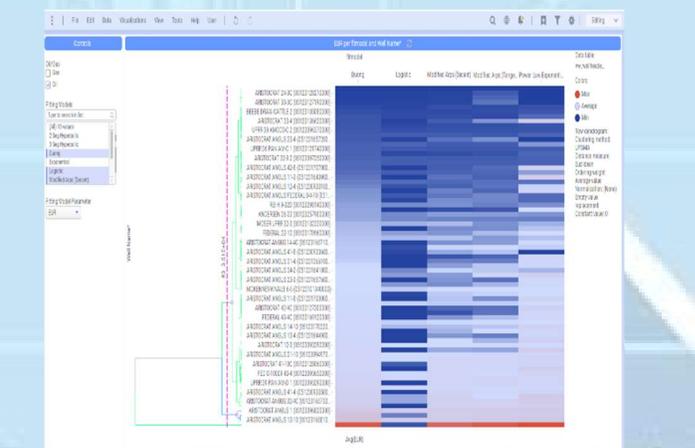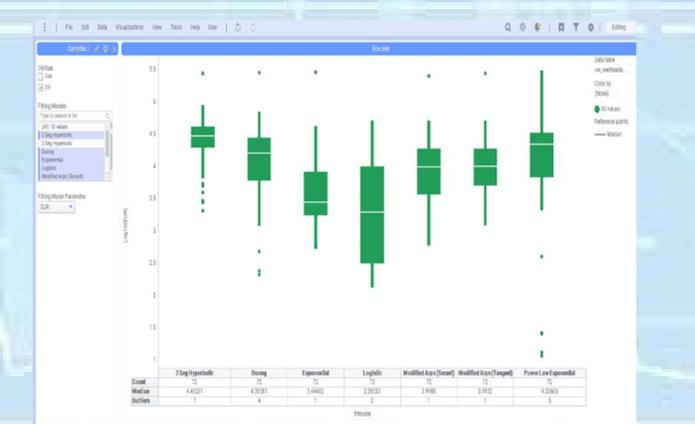
Data Sheet: DCA Autocast Engine

Blue River Analytics

- Dendrogram chart shows clustering of wells according to chosen fitting model parameter like EUR, and against chosen decline model. After looking at Box Plot to determine which decline model(s) best characterize the chosen wells, dendrogram can be used to analyze similarities and differences between the wells in that group for a chosen decline model. This can enable further analysis like what do wells in the highest (or lowest) EUR cluster have in common with respect to operator, completion technique, lateral length, geographic location

- Contour maps that allow you to develop map views of any of the fitting result parameters spatially. Eur, IP, fitting error could all be charted spatially for relationships and trend analysis.
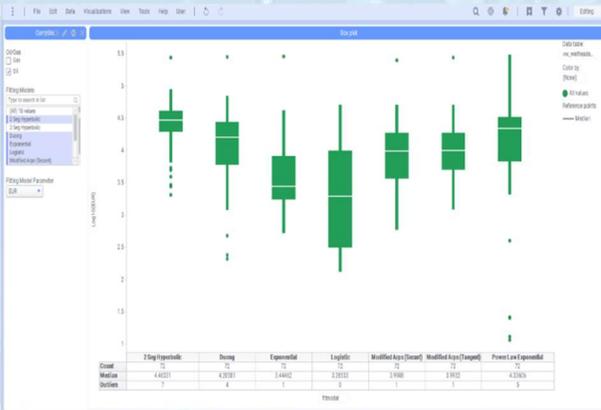
KEY ATTRIBUTES

Below are the Decline Models available:

1. Modified Arps (Secant)
2. Modified Arps (Tangent)
3. Exponential
4. Stretched Exponential
5. Duong
6. Power Law Exponential
7. Logistic
8. Transient Hyperbolic
9. 2 Segment Hyperbolic
10. DCA Scan Stochastic

Blue River Analytics, Inc.
10200 E. Girard Ave, Suite A-308
Denver, CO 80231
720-900-0028
blueriveranalytics.com