RE-Studio – Props Builder

Relative Permeability Tables Builder

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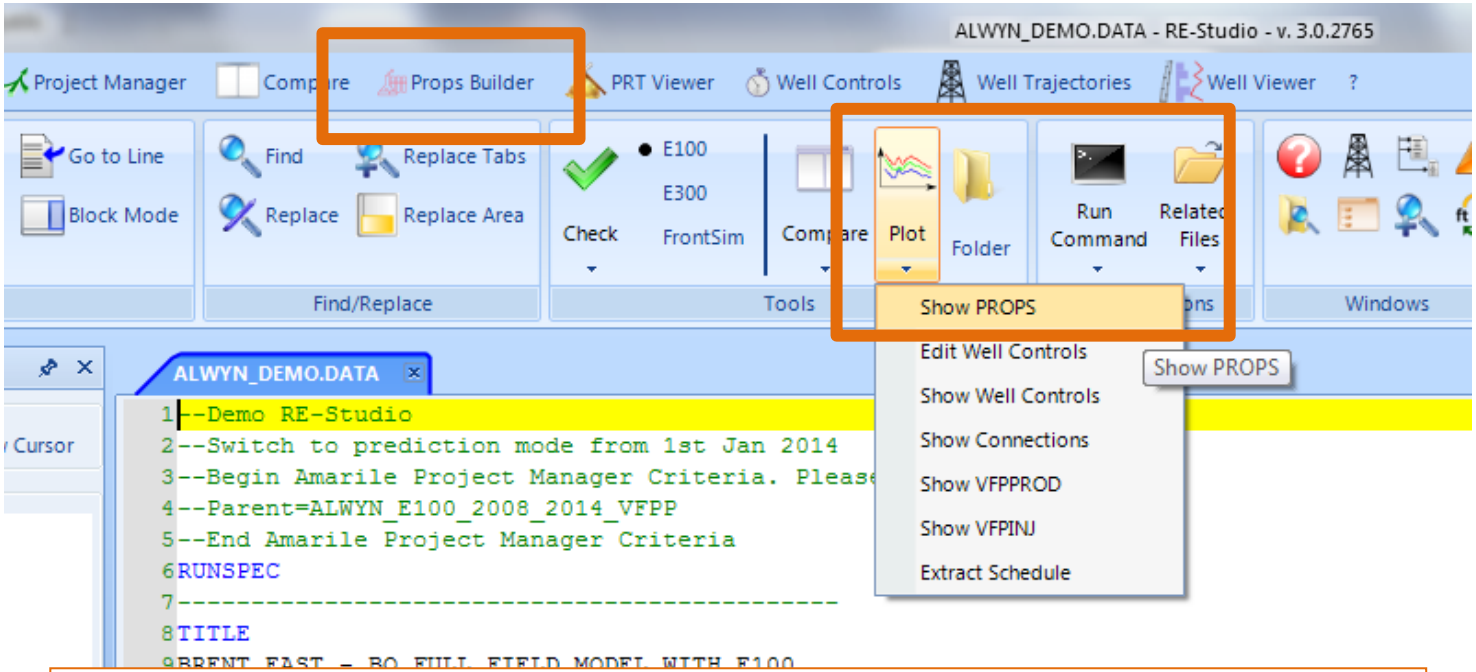
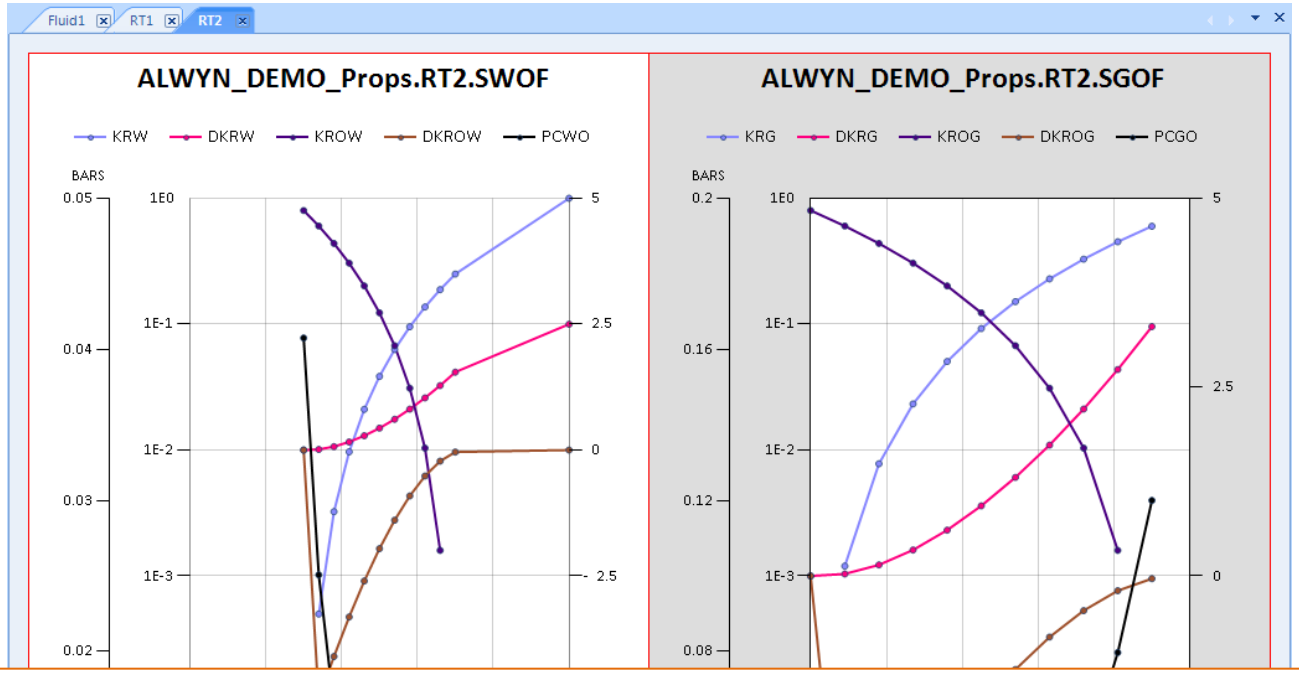
Purpose



- This module allows the user to create easily the saturation functions (SWOF and SGOF keywords table) for ECLIPSE datadeck based on Corey correlatoin

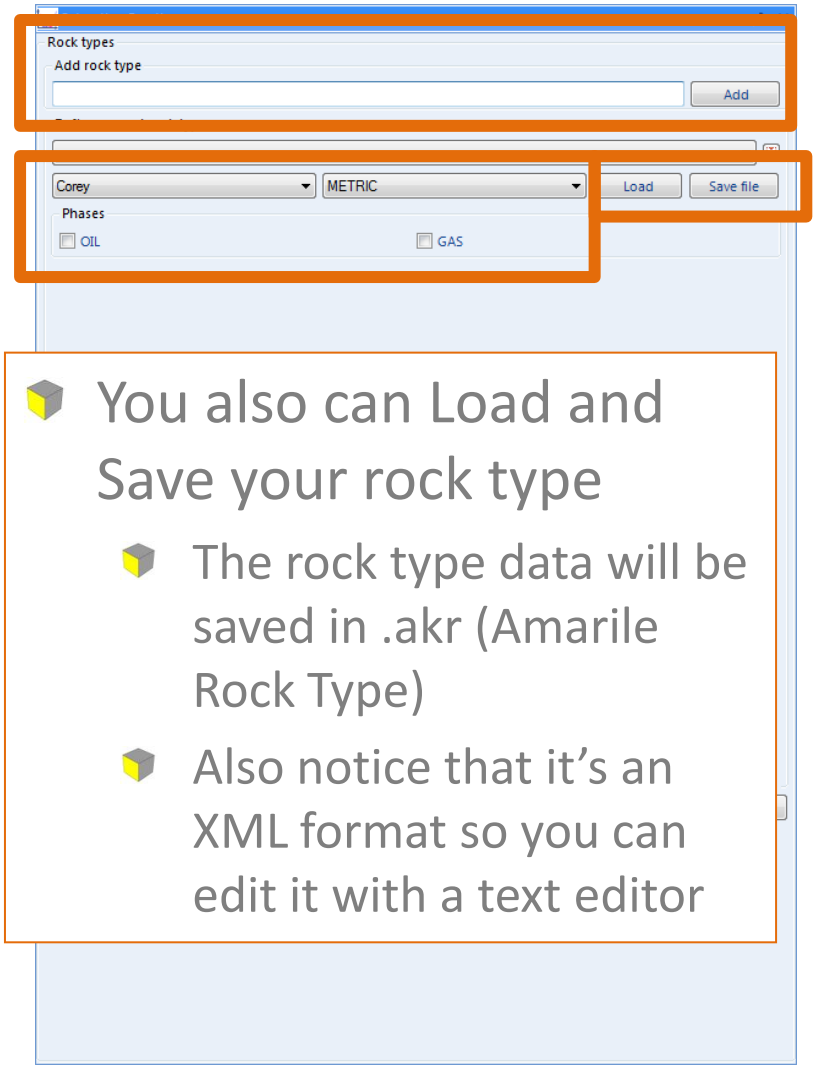
Plot – Show Props



- In For ECLIPSE, click “Show Props” in Plot button, RE-Studio will display Fluid and Rock Types (RT) information
  - KR: relative permeability
  - DKR: derived relative permeability
  - PC: capillary pressures
- NB: rel perm series are displayed in logarithmic scale
  - You can change this by double-clicking on the axis

Create your rock type

- First of all, you need to give a name to your rock type then it “Add”

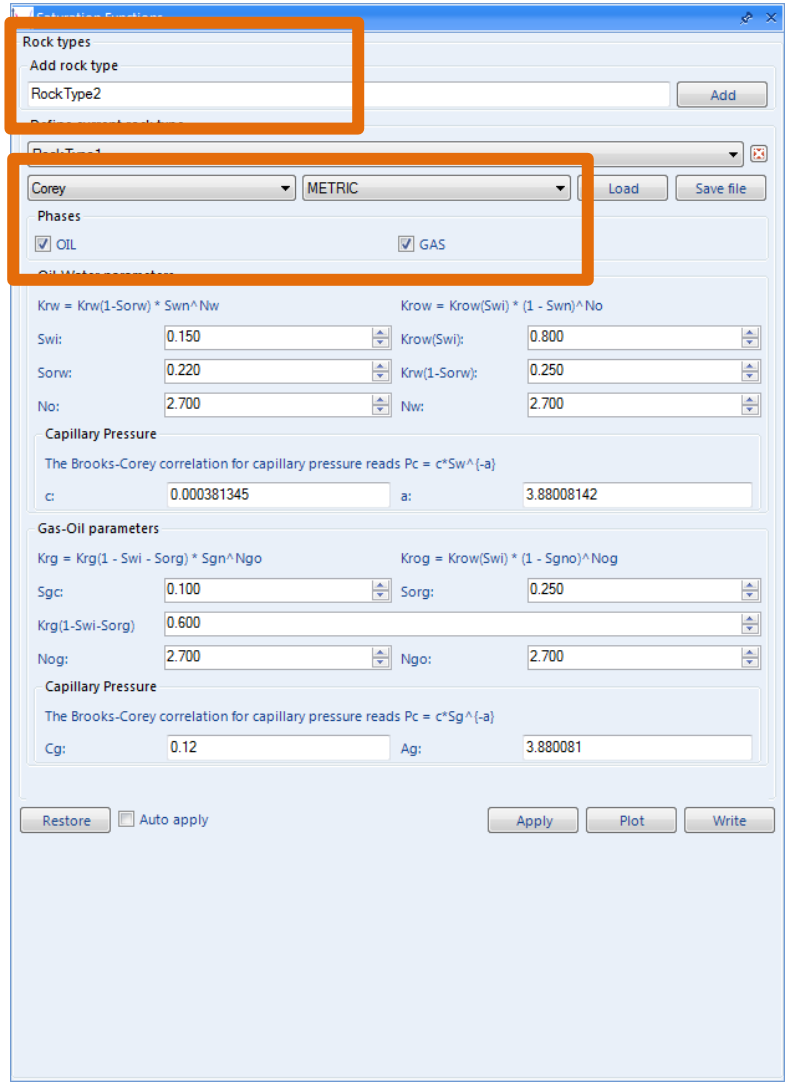


- Select the equation you want
- Select the unit you want
- Tick the buttons to select phases

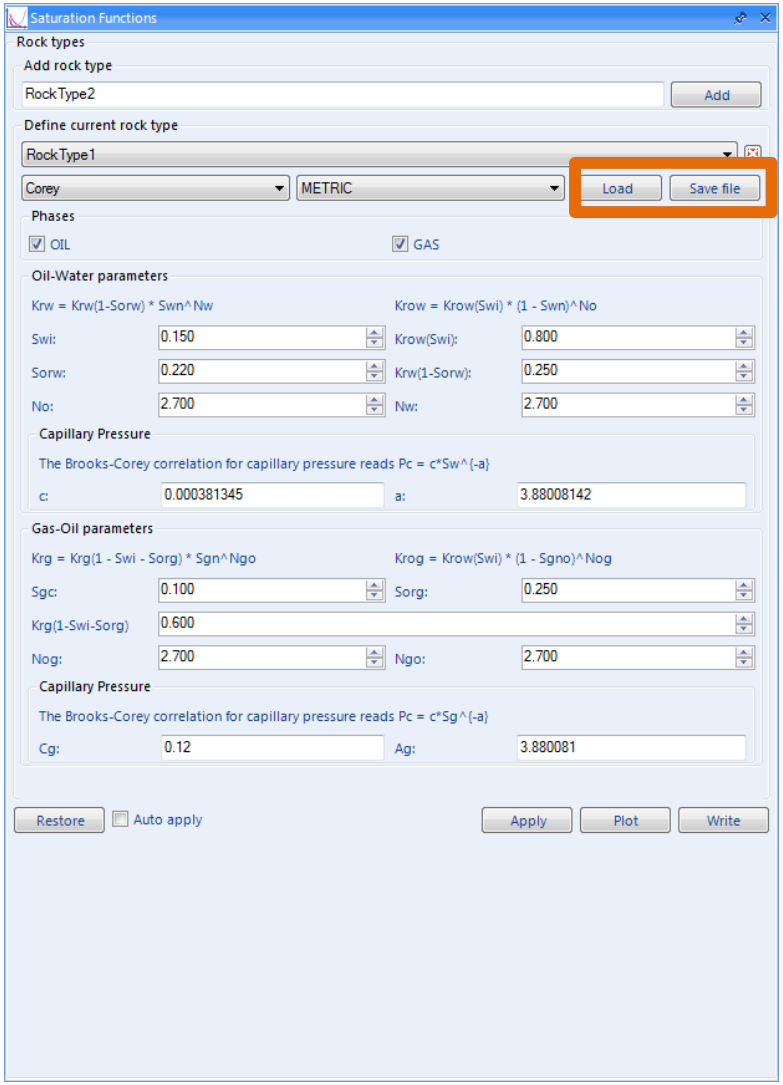
- You also can Load and Save your rock type
  - The rock type data will be saved in .akr (Amarile Rock Type)
  - Also notice that it’s an XML format so you can edit it with a text editor

Create your rock type

- For this example, I named my rock type “RockType1” and “Add” it
- I tick both oil and gas
- I am working with the Corey equation in a Metric system
- I defined parameters in all boxes
- I can click Plot to see the functions, and Apply only if the plots are already displayed

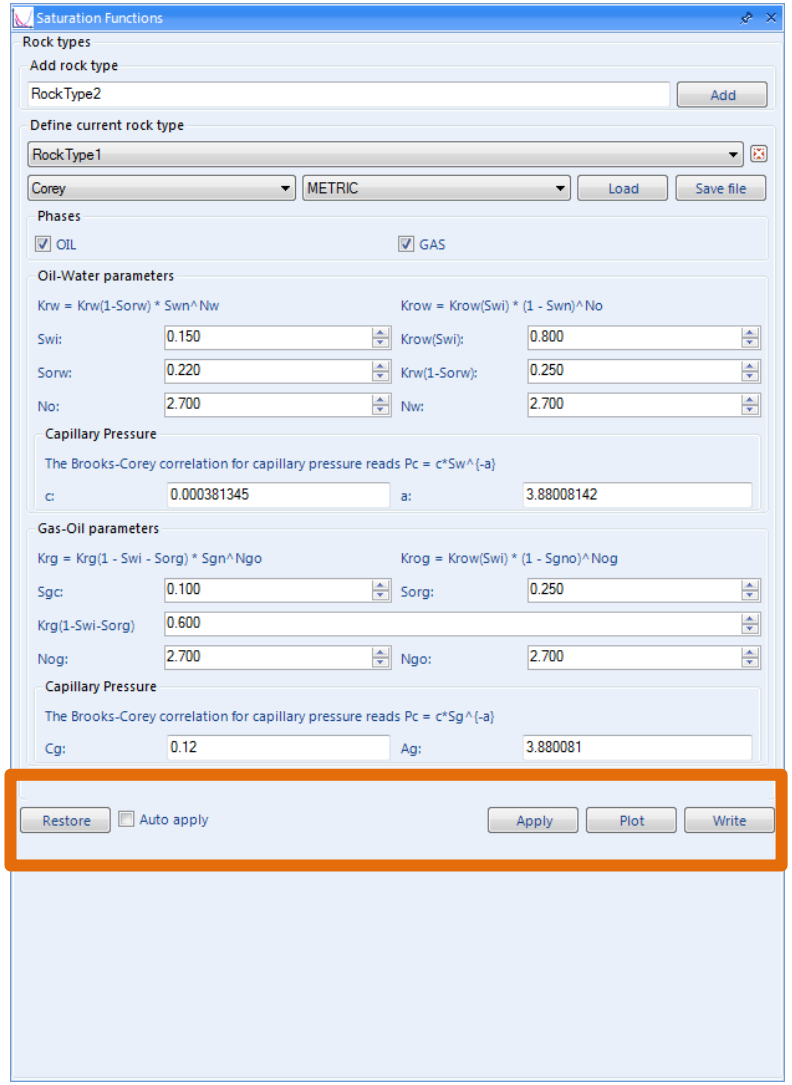


Load your rock type



- I can Save to file the parameters I have input
- I can Load from file such parameters
- Loading a AKR file will overwrite all the parameters for your current rock type
  - Caution: we are loading the parameters values without a name so you need to create and “Add” an empty rock type before

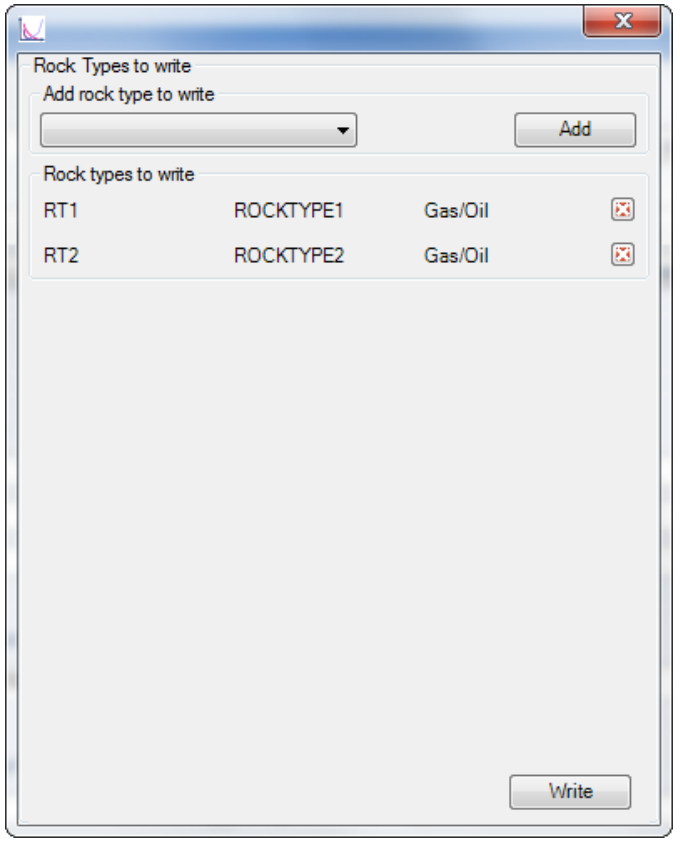
Edit your rock type



- Once you set the parameters, you can:
  - “Restore” the last save
  - “Apply” the changes to the series already plot
  - “Plot” the rock type
  - “Write” will generate automatically the keywords for your datadeck

Write the SWOF/SGOF

- When you hit the “Write” button, a window will pop up
- You can use any number of rock types by selecting them in the list then by hitting “Add”
- When you are satisfied with your list of rock types just hit “Write”



Write the SWOF/SGOF

PROPS Builder - Gas/Oil

```
SWOF
-- Rock type RockType1
--Sw                Krw                Krow               Pc
0.15                0                  0.8                0.59999973
0.2                 0.00026726         0.63992059         0.19650725
0.25                0.00173668         0.50166679         0.08267227
0.3                 0.00518999         0.3839033          0.04075024
0.35                0.011285           0.28525636         0.02240635
0.4                 0.02061382         0.20430839         0.0133462
0.45                0.03372469         0.13959123         0.00845049
0.5                 0.05113335         0.08957714         0.00561486
0.55                0.07333014         0.05266665         0.00387911
0.6                 0.10078463         0.02717104         0.00276764
0.65                0.13394902         0.01128542         0.00202875
0.7                 0.17326059         0.00304238         0.00152177
0.75                0.21914365         0.00021533         0.00116437
0.78                0.25               0                  0.001
1                   1                  0                  0
/
-- Rock type RockType2
--Sw                Krw                Krow               Pc
0.3                 0                  0.8                0.04075024
0.35                0.00091117         0.55784267         0.02240635
0.4                 0.00592077         0.3679217          0.0133462
0.45                0.01769394         0.22488787         0.00845049
0.5                 0.03847326         0.12311444         0.00561486
0.55                0.07027746         0.05662059         0.00387911
0.6                 0.11497553         0.01894646         0.00276764
0.65                0.17432583         0.00291573         0.00202875
0.7                 0.25               0                  0.00152177
1                   1                  0                  0
/

SGOF
-- Rock type RockType1
--Sg                Krg                Krog               Pc
0                   0                  0.8                0
0.1                 0                  0.48899072         0
0.15                0.00119716         0.3679217          1.582E-05
0.2                 0.00777915         0.26769705         0.00023287
0.25                0.02324763         0.18666604         0.00112297
0.3                 0.05054908         0.12311444         0.0034288
0.35                0.09233583         0.07525228         0.00815005
0.4                 0.15106353         0.04119672         0.01653446
0.45                0.22904244         0.01894646         0.03007108
0.5                 0.32846887         0.00633989         0.05048502
0.55                0.45144623         0.00097566         0.07973307
0.6                 0.6                0                  0.12
/
-- Rock type RockType2
--Sg                Krg                Krog               Pc
0                   0                  0.8                0
0.05                0.0015911          0.58207387         2.38E-05
```

- RE-Studio automatically generate the SWOF and SGOF keywords with the parameters you fulfilled
  - Here is an example with my RockType1 and RockType2

Plot your rock type

- All your rock type creation and importation will be available to plot in the right panel called “Quick Plot” of the Porps Builder Module