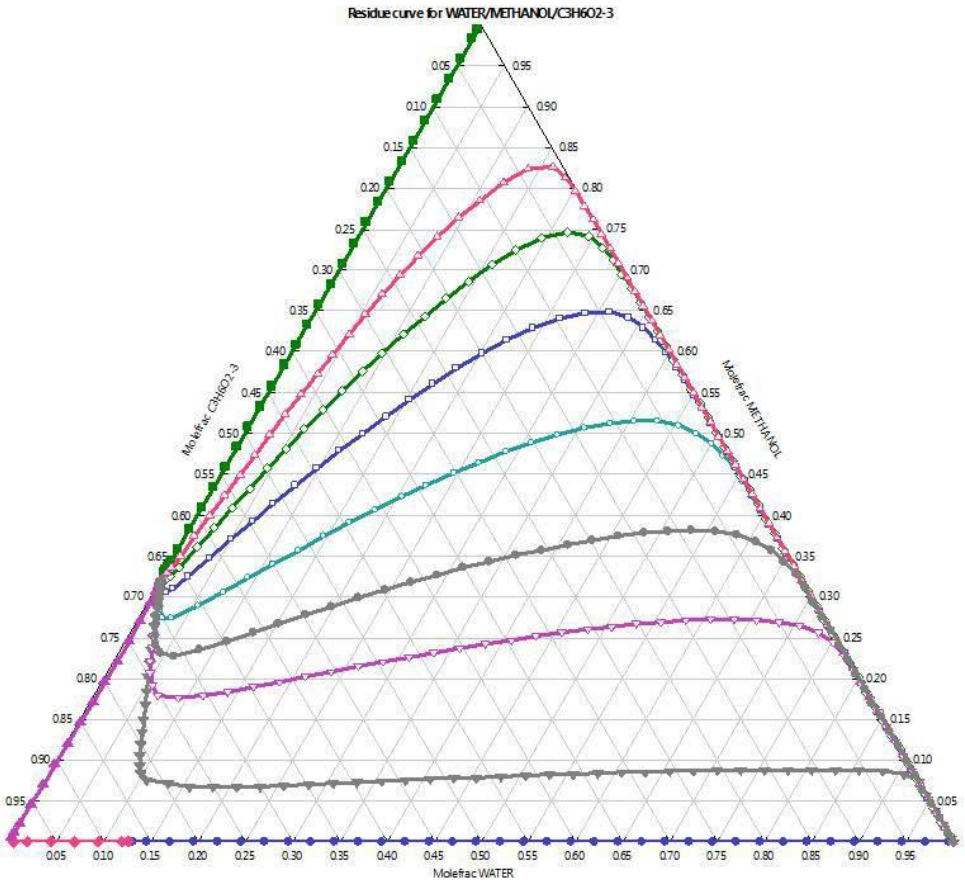
Residue Curves Using Aspen

In an earlier post I discussed about the how choosing the correct property package for Aspen is crucial to the meaningfulness of the result. In the post, I would like to talk about how the correct property package can impact the residue curves. If you would like to see how it affects the prediction for azeoptrope.

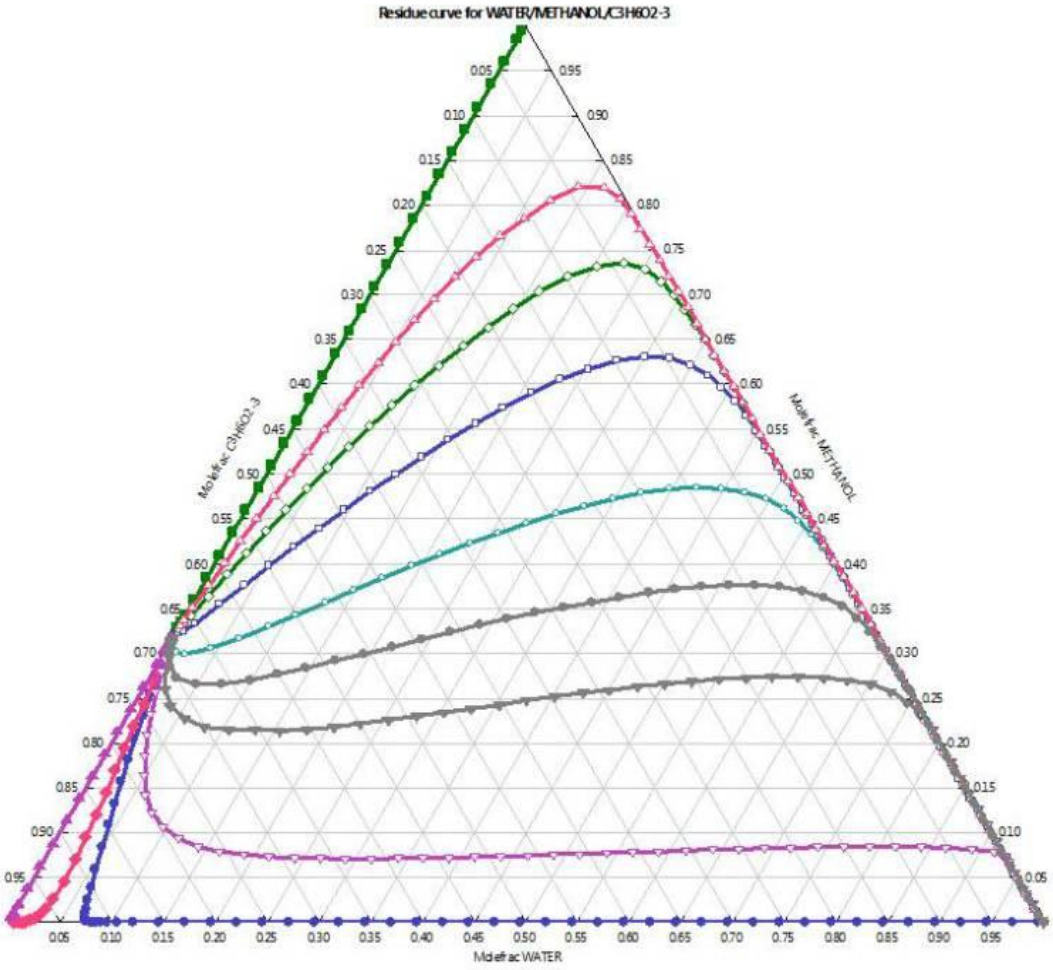
There are numerous property packages in Aspen. To name a few, Chao-Seader, Wilson, LHHW, Uniquac, Unifac, and Redlich-Kwong are all commonly used. However, each of them serves as the model for the specifications that follows. A residue curves describes the change of the composition of the liquid phase of a chemical mixture during continuous evaporation at the condition of Vapor-Liquid equilirium.

In this example, we try to study the residue curves of a three component system: Water, Methanol, and Methyl Acetate. Wilson was chosen as the first property package. Below is the resulting graph.



As you see in the bottom left corner, **Wilson** package is unable to predict the 2 liquid interfaces between Water and Methyl Acetate. Next, we studied the property

package **Unifac**. The result is shown below. As you can see also in the bottom left corner, **Unifac** is able to successfully predict the 2 liquid phases. Now that we have decided on which property package to use, we can proceed to flow-sheeting and work on other specifications.



Source: http://lehighcheme.wordpress.com/2014/04/21/residue-curves/