Interoperability Experiments on MATLAB®/Simulis® Thermodynamics/COCO TEA *via* CAPE-OPEN standard. Application to ternary liquid-vapor equilibrium representations.

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Abstract

3D LV equilibrium representation is a good way to visualize residue curves and singular points of a two-phase ternary mixture. For this purpose, we present some examples based on MATLAB®/Simulis® Thermodynamics/COCO TEA interoperability *via* CAPE-OPEN 1.0 standard. A MATLAB® source code, using real 3D and contour graphics capabilities is executed as a client application. Thermodynamic properties are calculated by a CAPE-OPEN Property Package, here from COCO TEA, using the CAPE-OPEN Thermodynamic Socket of Simulis® Thermodynamics. This "third part" architecture (CAPE-OPEN property package – Thermodynamics Server – Client application) illustrates the idea of the best tools devoted to the best use (MATLAB® as a development and graphical tool, Simulis® Thermodynamics as a thermodynamic calculation server allowing the use of a COCO TEA Property Package) and the way it is possible to realize this *via* CAPE-OPEN specifications.

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