1.1. Console Mode

Run console mode

In addition to the most common GUI (graphical user interface) mode, PanPhaseField can also run in the console mode without opening GUI. There are two ways to activate the console mode: (1) in Windows OS double click a batch file (extension with pbfx) in a folder, or (2) in Windows or Linux/Unix OS run through a Windows batch file (.bat) or Linux shell script file (.sh). The content of example batch file and shell script file is shown below:

```
An example batch file in Windows OS

::Please make sure the path of the "PanPhaseField_ConsoleMode.exe" file is correct;
::    "Title of program"           "full path of console mode executable"          "batch file name"
start "PanPhaseField_ConsoleMode"  "PATH_TO_PANDAT/PanPhaseField_ConsoleMode.exe"  "Example.pbfx"
```

```
An example shell script in Linux/Unix OS

# "full path of console mode executable "   "batch file name"
PATH_TO_PANDAT/PanPhaseField_ConsoleMode    resource/Precipitation_AlNi_1D.pbfx
```

In Linux/Unix OS, make `PanPhaseField_ConsoleMode` executable by doing this:

```
Make PanPhaseField_ConsoleMode executable in Linux/Unix OS

chmod +x PATH_TO_PANDAT/PanPhaseField_ConsoleMode
```

Visualize results from console mode

Simulation results (VTK files) from console mode (without using GUI) can be loaded to Pandat workspace to visualize. Users need to prepare two items to visualizing VTK files in Pandat workspace:

(1) The batch file which describes the simulation performed in batch mode.

(2) The folder containing VTK files.

Batch file and VTK files must be consistent, for example they come from a same simulation. Follow the steps to load the VTK files:

(1) In Figure 1 (a), create a new result node in Pandat workspace.

(2) In Figure 1 (b), select batch file of the batch mode calculation, as is shown.

(3) In Figure 1 (c), select corresponding VTK folder form the same batch mode calculation.

(4) After clicking **OK** in Figure 1 (c), VTK files will be visualized in Figure 2.
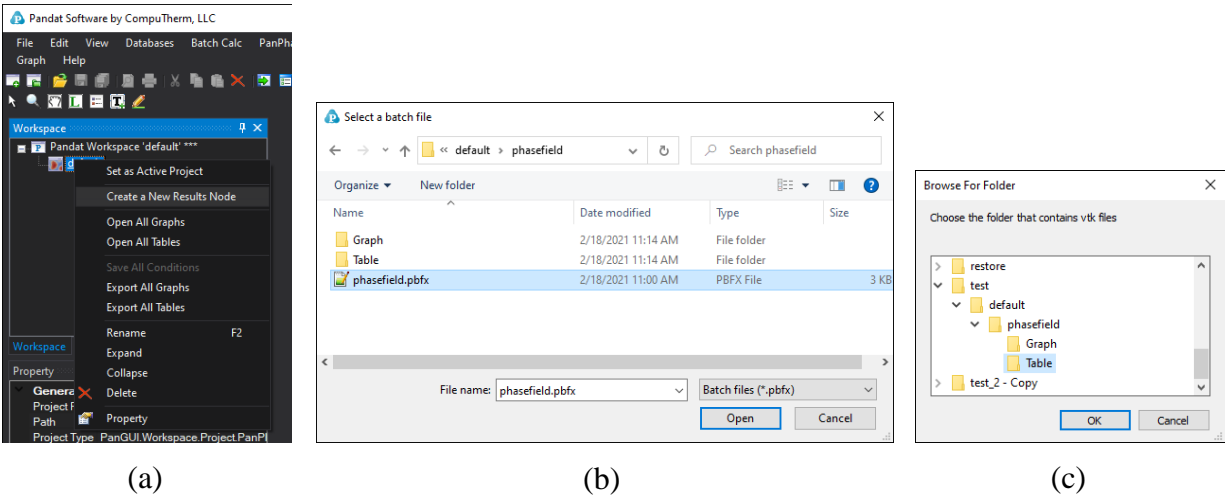
Figure 1. Load VTK files from batch mode calculation: (a) Step 1, create a new result node (b) Step 2, select batch file; (c) Step 3, select VTK folder.
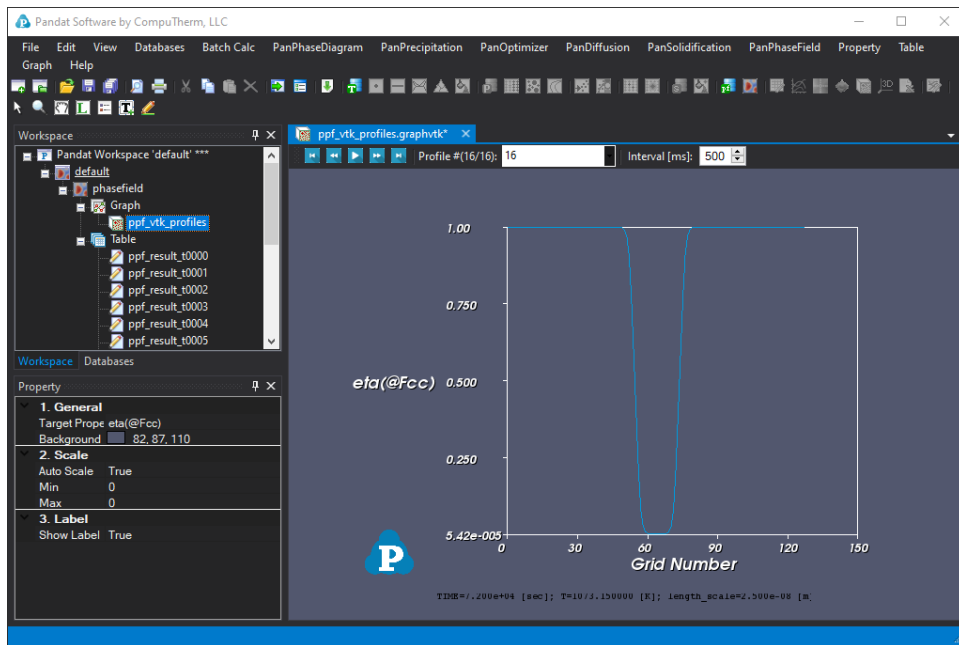

Figure 2. Load VTK files from batch mode calculation: Step 4, VTK files visualized.