OpenType variable fonts support in DTL OTMaster

The OpenType variable fonts (OTvar) specification has added a whole new dimension to font technology, which allows large font families to be bundled into a single font file with a continuum of possible font variations along a font axis. This, of course, required the introduction of new tables in the font file and modifications and improvements to already existing tables. Unfortunately, the dichotomy of cubic and quadratic Bézier outlines (i.e., OTF vs TTF) still remains in the font file. As a consequence, for PostScript-flavored OpenType fonts, the CFF table is replaced with a CFF2 table, while for TrueType-flavored OpenType fonts, the glyph table is supplemented with a gvar table.

Introduction

Currently OTM supports display and modification of the following tables:

1. fvar
2. gvar
3. avar
4. STAT
5. HVAR
6. MVAR
7. CFF2 (at the moment only implemented for standard, i.e., 'non-variable' fonts).
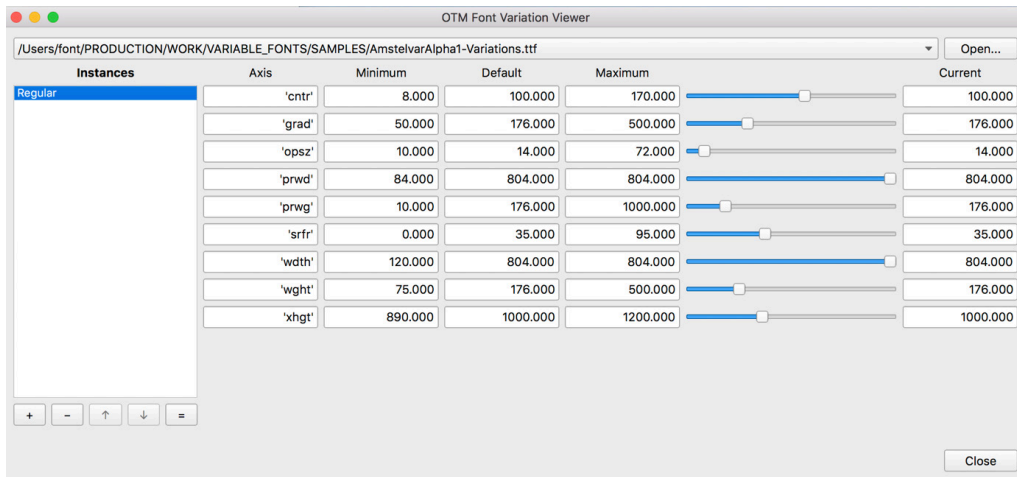
The following functionality has been added and/or modified to support OTvar fonts:

1. The font variation viewer that shows the available axes and predefined instances. It shows sliders for each axis, which can be used to interpolate between the minimum and maximum values of each variable. Moreover, this tool can be used to edit the predefined instances: change the parameters, delete an entry, or create a new one.

2. All display windows in DTL OTMaster have been changed to show the currently selected variable font values:
    – Font Viewer
    – Text Viewer
    – Glyph Viewer
    – Glyph Editor

3. The Side by Side viewer makes it possible to display *all* predefined instances in the font at once.

4. All aforementioned tables can be displayed and edited in the 'main' window.

5. The 'Export…' function in the 'File' menu can be used to export an instance of a font with the currently selected parameters from the Font Variation Viewer to a UFO file, or one of the IKARUS-based formats (IB, IQ, II).
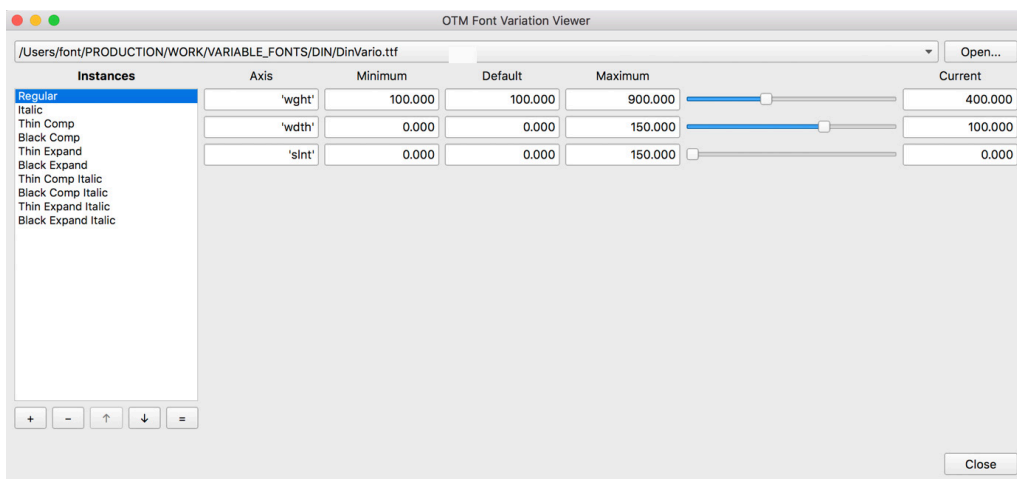
The following pages provide more detailed and illuminated descriptions of the above functionality.

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This viewer shows all axes in the font and the default settings for those axes. With the slider one can change any value, or one can use the input fields on the right to enter a value between minimum and maximum.
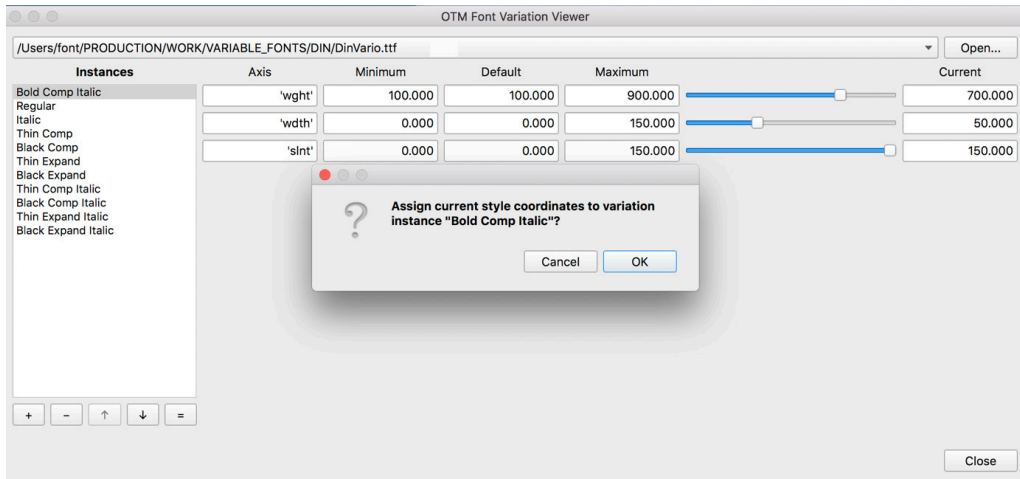
Font Variation Viewer

Another example with more predefined instances shown in the left box:

The small icons below the Instances box allow one to edit the predefined instances:

-   +   to add a new instance,
-   −   to remove a selected instance,
- ↑↓ can be used to reorder the instances,
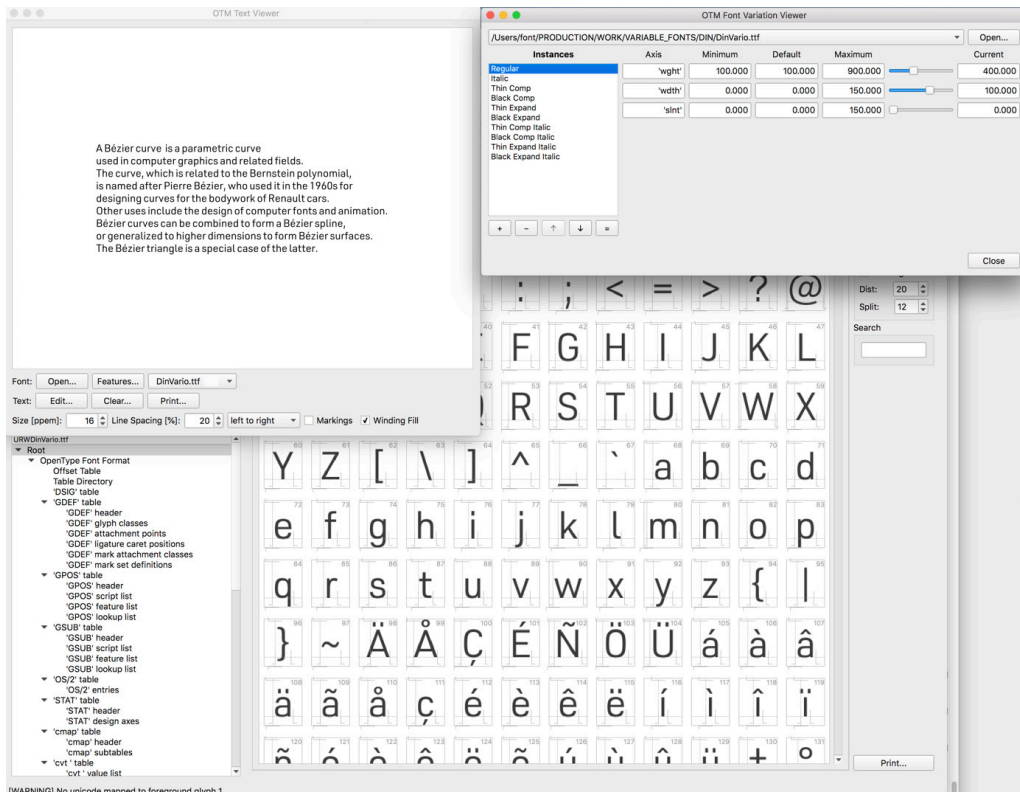-   =   to assign current values to the selected instance.

This functionality can be used to add more predefined instances, for example a condensed bold-italic version:
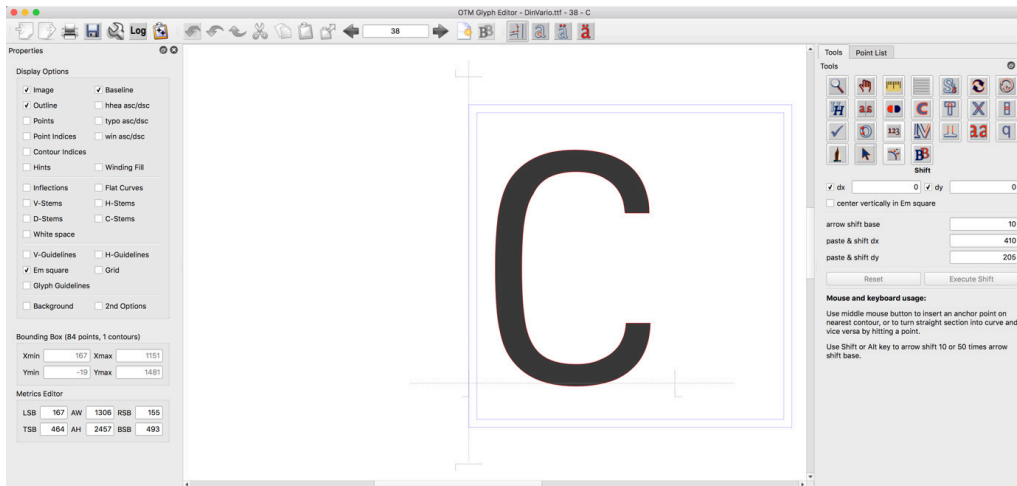
Dutch Type Library

All necessary tables (fvar, name) will then be changed and the new instance can also be used in applications that do not support variable fonts via sliders.
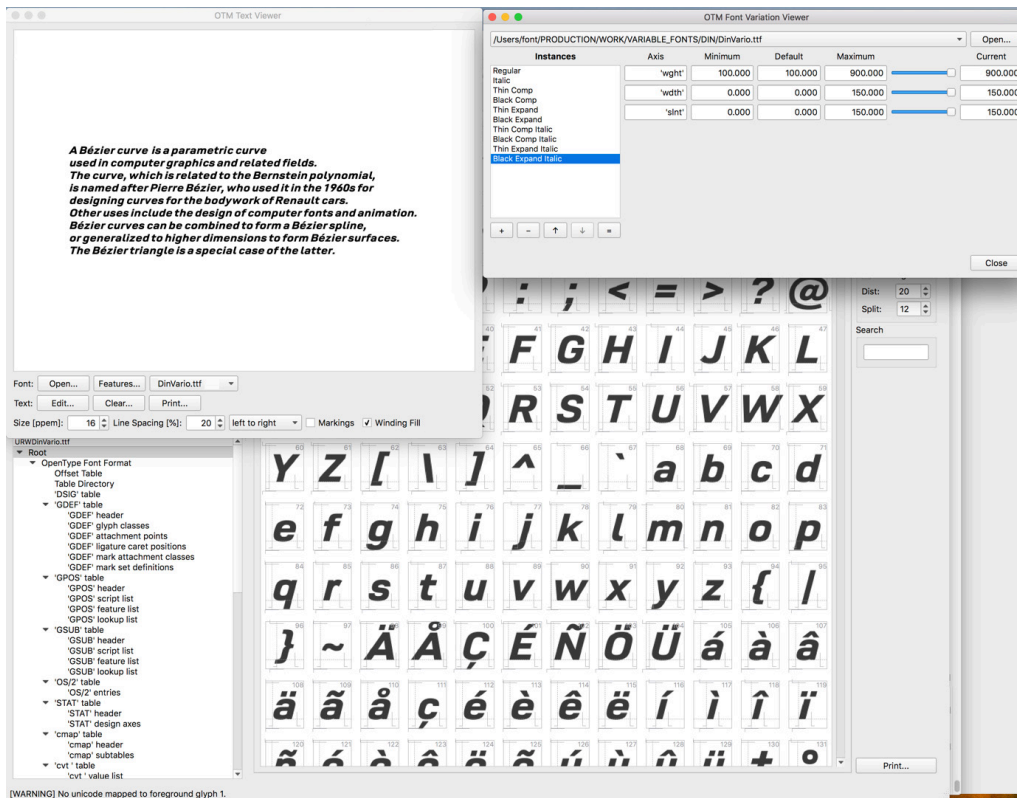
All display tools (Font Viewer, Glyph Viewer, Text Viewer, Glyph Editor, and Side by Side Viewer) will use the parameters specified in the Font Variation Viewer, as shown below: **Viewing and Editing Windows**
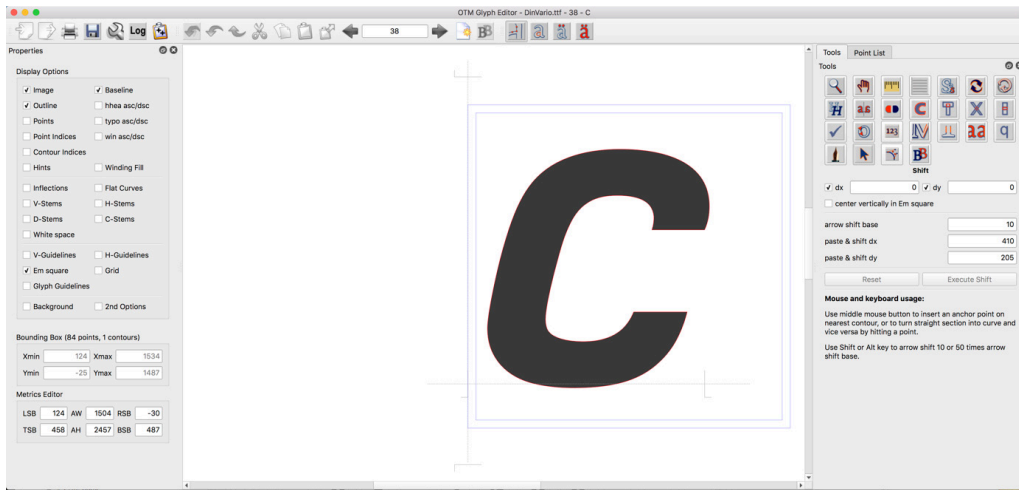
Selecting new parameters changes the display:

By default, this viewer displays the current instance with the parameters selected in the Font Variation Viewer.

Side by Side Viewer

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At the bottom one can see a checkbox named 'Variation Instances'. This can be used to additionally display all defined instances.

In the main window OpenType variable fonts tables, such as var, gvar, avar, STAT, HVAR, and MVAR, can be inspected and altered. The contents of the tables can be displayed as usual in OTM:

OpenType variable fonts tables

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