

Tips, Tricks & Shortcuts

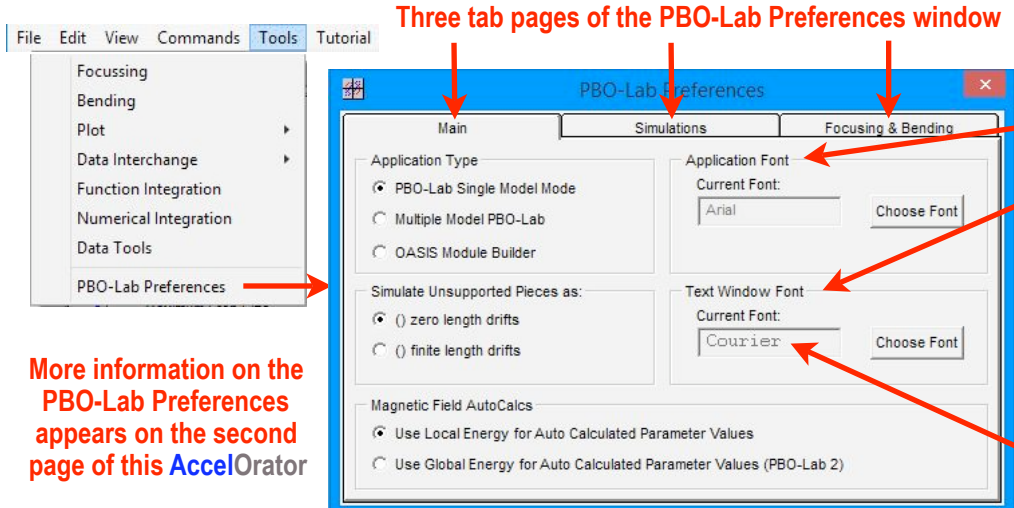
Selecting the Best PBO Lab Preferences to Meet Your Needs

■ PBO Lab 3.1 Offers Useful Application-Level Options

This issue of the **AccelOrator** is devoted to providing an overview of some application-level options available in PBO Lab. The application-level options are accessed in the PBO Lab interface using the Document Window menu item Tools and selecting PBO-Lab Preferences.

The PBO-Lab Preferences window opens with this selection and is illustrated below. It has three tab pages. Preferences set in this window are stored in a configuration file (PBOlab.cfg) in the main PBO-Lab directory. Unlike Module Options which can be defined separately for each PBO-Lab model file the Preferences are global and apply to all models opened in PBO-Lab.

Three tab pages of the PBO-Lab Preferences window



Application Font and the Text Window Font can be set separately using the corresponding Choose Font button

AccelSoft recommends setting the Text Window Font to a "sans serif" font such as Courier for better column alignment

More information on the PBO-Lab Preferences appears on the second page of this **AccelOrator**

Upcoming Events and Other News

■ 22th International Conference on Cyclotrons and their Applications (CYC 2019)

Cape Town, South Africa: 22-27 September 2019



We invite our customers and **AccelOrator** readers to visit our table booth at CYC 2019 to ask questions, offer suggestions and learn more about our software.

■ 26th International Conference on the Applications of Accelerators in Research and Industry (CAARI 2020)

Las Vegas, Nevada: 2-7 August 2020

Visit us during CAARI 2020 and the international SNEAP symposium being held simultaneously in Vegas!

*** ACCELERATOR NEWS BULLETIN ***

More information and examples of using the PBO Lab 3.1 PSI-TURTLE Module appear in a paper presented at the Vancouver International Particle Accelerator Conference (IPAC 2018). The new material is in a paper entitled:

"Using Graphic Turtle with the Particle Beam Optics Laboratory (PBO Lab)" paper THPAF076

Visit the AccelSoft website to download a preprint of this paper as well as other papers illustrating the use of AccelSoft products, prepared both by our staff and by many of our customers.



In addition to setting font preferences, the Main tab page of the PBO-Lab Preferences window (shown on page 1) is used for three other major options.

■ Choosing the Application Type

PBO Lab 3.1 has three Application Type selections. The vast majority of users will want the PBO-Lab Single Model Mode (default setting). The Optimization Module utilizes the Multiple Model PBO-Lab mode while the OASIS Module Builder mode is used with the OASIS Module Builder.

■ Simulating Unsupported Pieces

Not all PBO-Lab Pieces are used by every Module. PBO-Lab generally takes care of this automatically, but for some Pieces there is no clear cut “automatic” procedure on how they should be handled when they are not supported in a Module. This Preference setting models such Pieces as either zero length drifts (i.e. no

element) or finite length drifts. With the latter selection, the length of the unsupported Piece is modeled as a drift of the same length. Changing this Preference, and comparing beamline lengths computed by the Module, is useful for identifying whether unsupported Pieces are present in a beamline model.

■ Magnetic Field AutoCalc Options

PBO-Lab offers several approaches to modeling most magnetic elements, including different options for inputs that are not independent. The PBO-Lab AutoCalc engine handles the conversions between these options, several of which require the use of the beam energy. In PBO Lab 2.0 the energy used for these conversions was always the Global Parameter Beam Energy. When acceleration is present that choice may not be the most useful. The Use Local Energy choice is recommended; it utilizes the energy at the input to that element.. The other option is for comparison to PBO-Lab 2.

Options for the Focusing & Bending Tools

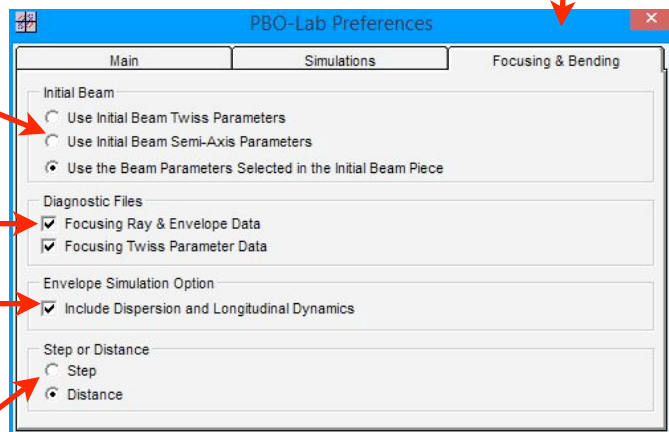
Initial Beam option determines which Beam Parameter set is used for the Focusing & Bending envelopes: Courant-Snyder (Twiss) Parameters - Beam 2, Semi-Axes Parameters - Beam 1, or As selected in the Beam Parameters switch.

Diagnostic Files option outputs text files of the data used for the Focusing tool display window.

Option to Include / Exclude dispersion in Focusing & Bending tool envelopes. See AccelOrator Volume 17 Number 2 for more information.

Show slider position as Step count (integer) or Distance (meters) in Focusing tool display window.

PBO-Lab Preferences window Focusing & Bending tab



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