



## Tips, Tricks & Shortcuts

### Loading User Data Into PBO Lab Graph Plot Windows



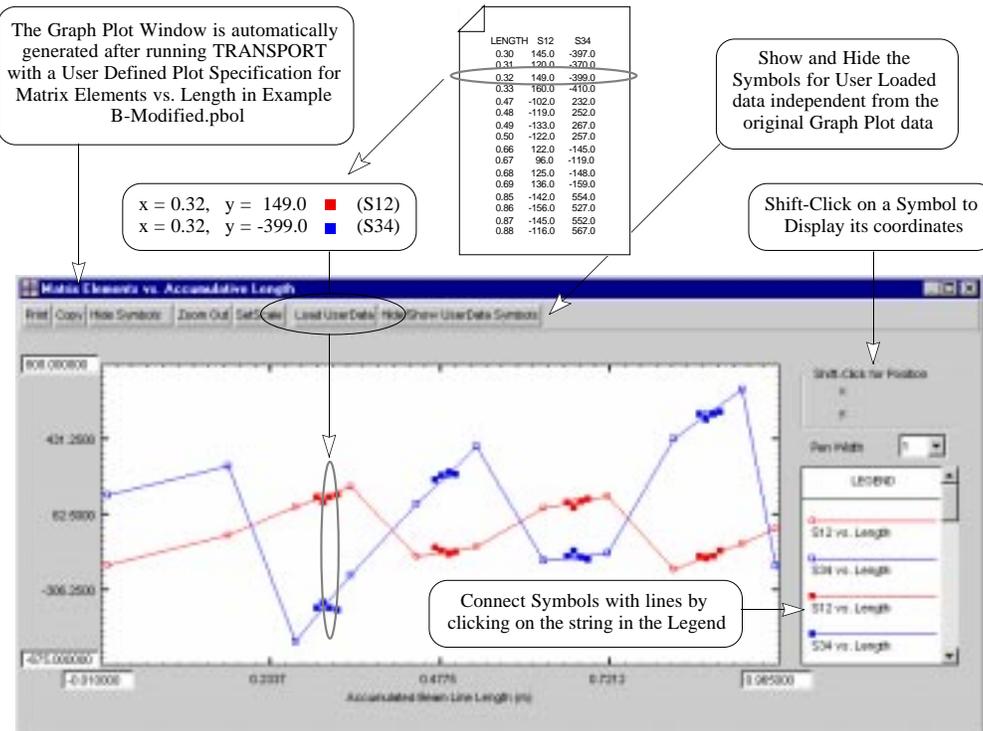
PBO Lab Graph Plot Windows include support for loading user specified plot data files. This allows plot data to be loaded directly into Graph Plot Windows that are created for line plots as a function of beamline length. This feature can be used for a variety of purposes including loading external data such as control system diagnostics into Graph Plot Windows for comparison with simulation results from the different PBO Lab Application Modules (e.g. TRANSPORT, MARYLIE, etc.).

The Load User Data option can also be used to accumulate the plot results from multiple runs of an Application Module or to compare results from different Application Modules in a single Graph Plot Window. Plot data

generated with the PBO Lab Focusing Tool can also be combined with Graph Plots produced with the different Application Modules.

Use the Load User Data button (in the button bar at the top of the Graph Plot Window) to load length plot data from PBO Lab Application Modules, the PBO Lab Focusing Tool, or external data sources.

The first column of the Plot Data file is for length data and must have the “Length” heading. Any number of columns may follow with any user specified column heading. Each of these columns are used to plot data points and/or connecting lines as a function of the lengths in the first column. (There is no limit on the the number of rows or columns in a User Data file.)



An example showing how to load User Defined Plot Data in PBO Lab Graph Plot Windows.

\*\*\* Season's Greetings from AccelSoft \*\*\*



For data on current product offerings and other information, contact AccelSoft directly or through your distributor:

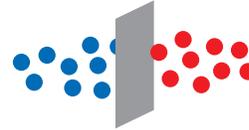
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### PBO LAB 2.0 BETA ANNOUNCEMENT

The beta release of PBO Lab 2.0 is now available on both Windows and Macintosh platforms. This latest version is the first major upgrade to PBO Lab since its introduction.

We documented many of the new features of the upgrade in our previous newsletter. One especially useful new capability of PBO Lab 2.0 beta is the support for merging different data sets from Plot Windows, including the ability to input user-defined data into graphs (see Tips, Tricks & Shortcuts on the previous page).

Also new with PBO Lab 2.0 beta is the availability of the new MARYLIE Module. MARYLIE is a FORTRAN program for beam transport and tracking based on a Lie algebraic formulation of charged particle trajectory calculations.

Please contact us at [accelsoft@ghga.com](mailto:accelsoft@ghga.com) for more information on the PBO Lab 2.0 beta release.

### Modules Currently Available for PBO Lab

#### TRANSPORT Module

**Characteristics:** 3rd-order matrix code for magnetic optics and some RF optics. Many fitting options, extensive algebraic parameter coupling.

**Typical uses:** Transfer line design.

#### TURTLE Module

**Characteristics:** Multi-particle ray tracing code for magnetic and some RF optics. Models misalignments, apertures, slits, beam distortion, particle loss.

**Typical uses:** Transfer line performance studies.

#### MARYLIE Module

**Characteristics:** 3rd-order Lie algebra code for magnetic optics and some RF optics. Extensive fitting and optimization options, linear parameter coupling. Tracking and multi-particle ray-tracing symplectic to all orders. Nonlinear analysis, tracking, dynamic aperture, beam distortion, particle loss.

**Typical uses:** Storage ring design, transfer line design, storage ring performance, transfer line performance.

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