

## Introducing PBO Lab 2.0 Beta

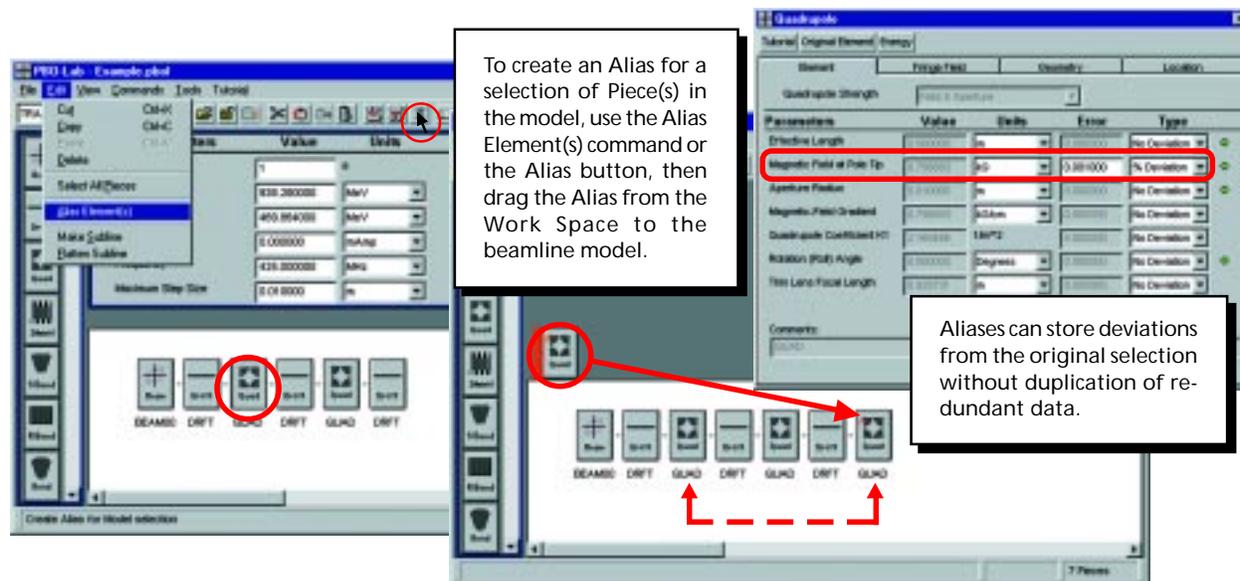
### First Major Upgrade Offers New Features, Enhancements

We are pleased to announce that the beta release of PBO Lab 2.0 is now available. AccelSoft would like to thank our numerous users who have offered their feedback: we have relied on your input to develop a package that is even more intuitive and user-friendly. This latest version of PBO Lab incorporates many new features as well as several enhancements to the graphic interface shell:

- PBO Lab 2.0 (beta) is now available on CD-ROM.
- A new MARYLIE Module has been developed and is now available for this new release.
- A new Application Context pop-up menu is used to display and access application-specific inputs for each of the installed Application Modules.
- Native inputs for the selected Application Context are indicated in the Global Parameters and Piece windows with green dots that appear to the right of a parameter.
- A new button bar in the Document Window allows quick access to File, Edit, and View commands.
- Users now can import lattice descriptions formatted as MAD, TRANSPORT/MAD, and TRACE 3-D.

- Comments in the Piece window are displayed as labels for each Piece in the Model Space and Work Space of the Document Window (see figure below).
- A new Alias Piece has been added (see figure below).
- Pieces can now be *moved* by holding down the shift key while dragging a Piece icon. Of course, Pieces may also be copied, cut, pasted, etc.
- Additional numerical data is displayed and scale adjustments are now available to the Focusing and Bending Trajectories Modules.
- Graph Windows can be resized, from thumbnail to full screen, and plot scales can be set directly in the Graph Windows.
- Many other features and improvements have been added that are too numerous to list here.

This new beta release of PBO Lab 2.0 is available to both current PBO Lab users and anyone considering the purchase of this package. To obtain more information on the latest (and greatest) version of PBO Lab, please contact AccelSoft at [accelsoft@ghga.com](mailto:accelsoft@ghga.com).



Example of the new Alias feature in the PBO Lab 2.0 beta release.

# AccelSoft User Profile

## Using PowerTrace For High Space Charge Beamline Design

As the Vice President in charge of Accelerator and Special Projects at Advanced Energy Systems (AES), Dr. Alan Todd has enjoyed a prolific career in the field of accelerator and fusion technology. Before helping to launch AES in 1998, Dr. Todd was the Manager of Accelerator Systems and Analysis at Northrup Grumman Corporation in Princeton, New Jersey.

Former employees of Northrup Grumman's Advanced Energy Systems Group formed AES to produce electron and ion accelerator systems, free electron lasers, and advanced radiation sources. AES's active programs include a high-current tandem accelerator-based Contraband Detection System (CDS) as well as the Compact Infrared Free Electron Laser (CIRFEL) that is being relocated to the University of Maryland.

AES relies on PowerTrace for the first-order design of most of their ion and electron beamlines. "We are usually dealing with high space charge beamlines that have a limited number of acceleration and optical elements, and, hence, finite current effects are a key feature of the initial physics design of these systems," explains Dr. Todd.

He finds the PowerTrace graphic interface user-friendly because it offers the ability to perform beamline design calculations on a personal computer or a laptop instead of a large, immovable workstation. Dr. Todd has also discovered that PowerTrace is easy to use for preparing graphics presentation materials (see CIRFEL figure below). He currently runs the software on a PowerMac 7500/100.

**"We will continue to use the code for initial beamline physics design of both high-current electron and ion systems."**

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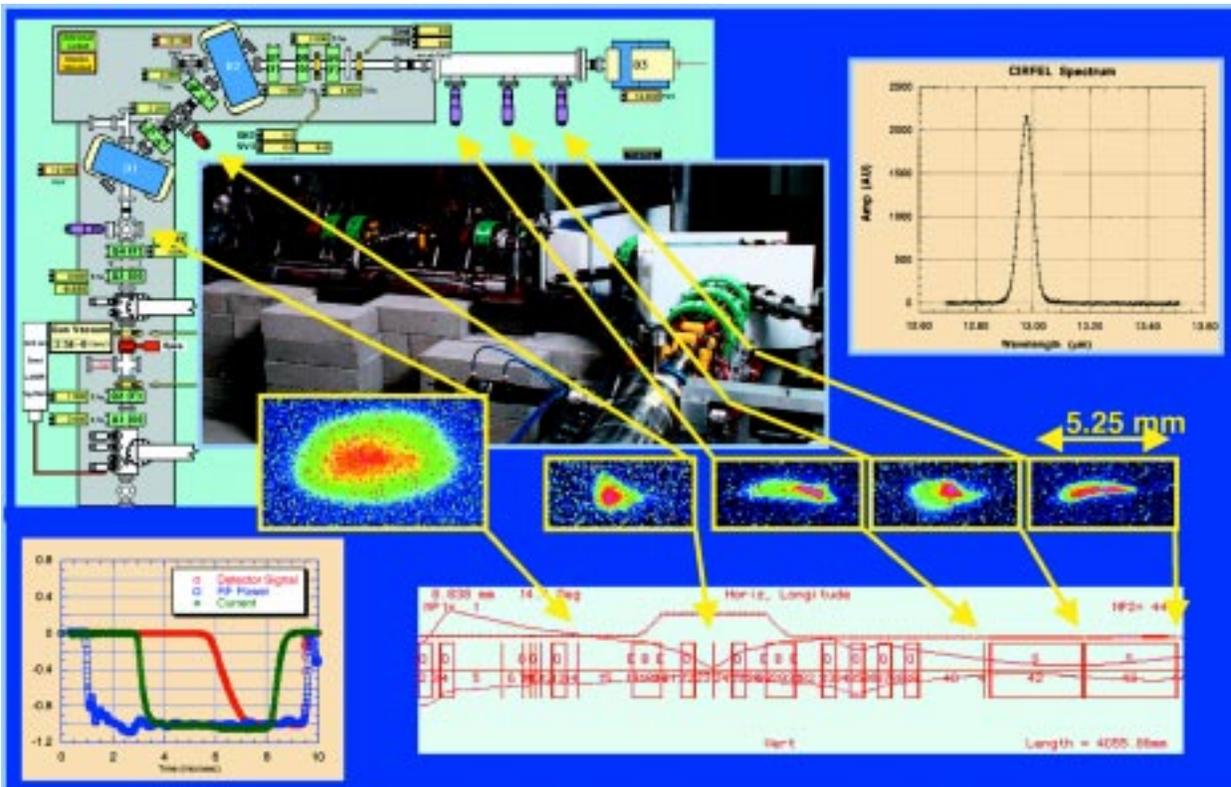


Image depicting diagrams, graphs, and PowerTrace output from the Compact Infrared Free Electron Laser (CIRFEL).

# The Year 2000 Concern

## An Update on Current Releases of AccelSoft applications

**B**ecause the majority of people on the planet have been inundated recently with reports of the imminent disaster that will befall our society on January 1, 2000, the last thing our readers may want to hear about is more Y2K hoopla. The purpose of this piece, however, is to provide an update and reassurance on our software's Y2K readiness.

Our software engineers have examined this issue with respect to all current releases of AccelSoft's products. We have conducted a series of tests by setting the system clocks forward beyond the year 2000 on several platforms. Each software product met all functional requirements for every test. The only date-specific issue our engineers identified was that the output text file from the PBO Lab TURTLE Module only prints a two-digit year. Here is a breakdown of recent cases tested:

**PBO LAB 1.1.4:** Tested on Windows98 on a Pentium II 266.

**PBO LAB 2.0 BETA RELEASE:** Tested on Windows NT 4.0 on a Pentium II 333.

**POWERTRACE 2.0.3:** Tested on Macintosh OS 8.1 on a PowerBook G3.

**NEDLAB 1.27:** Tested on Macintosh OS 7.5.3 on a PowerPC 601.

**THE LIDOS ADVISOR 3.0.1:** Tested in DOS shell on Windows 95 on a Pentium I 100.

A PBO Lab TURTLE Module with a four-digit year printout will be available in a future release. If you have any concerns about the Y2K issue as it relates to our software, feel free to email us at [accelsoft@ghga.com](mailto:accelsoft@ghga.com).

### TECH SUPPORT ANNOUNCEMENT

AccelSoft provides a **Technical Support and Product Update Service** to all users of our software. This service includes the following:

- 48-hour response time to emailed requests for technical support
- Upgrades and updates that are sent to the user automatically
- Early access to beta releases
- Opportunity to provide feedback to our software engineers to enhance the applications
- Very reasonable annual fee (especially if ordered within 30 days of expiration of current technical support service) that can be applied as credit towards the purchase of additional Computation Modules (PBO Lab) or Drop-in Palettes

AccelSoft's Technical Support and Product Update Service is included free for one year with all new purchases. Please contact us at [accelsoft@ghga.com](mailto:accelsoft@ghga.com) for information on how to renew this service if your current support agreement has lapsed.

### Alan Todd User Profile

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Dr. Todd has used PowerTrace for the design of three photocathode beamlines. The software was also an integral tool for modeling the CIRFEL beamline and making comparisons to the OTR (Optical Transition Radiation) images of the beam spots. "We will continue to use the code for initial beamline physics design of both high-current electron and ion systems," Dr. Todd says of future projects.

Dr. Todd began using MacTrace, the PowerTrace predecessor, in 1993 at Grumman, where he devoted 20 years of his career. He received his Ph.D. in Plasma Physics in 1974 from Columbia University and went on to become a Research Staff Scientist at Princeton Plasma Physics Laboratory until 1979.

When he is away from work, Dr. Todd spends a great deal of his spare time involved in youth soccer. He currently coaches a girls' club traveling team and also a girls' select team. In addition, he serves as the Vice President of Facilities for the largest youth soccer club in New Jersey. "I would like to improve my golf game but seldom get a chance after work and soccer," he says.

In conclusion, as a long-time user of AccelSoft's software, Dr. Todd has provided us with very useful feedback over the years. We are grateful to him for offering his valuable time to share his experiences with PowerTrace with our readers.

Due to an area code change, please make a note of AccelSoft's new contact information:  
Phone: 858.677.0133 ▲ Fax: 858.784.3736



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

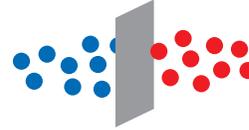
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