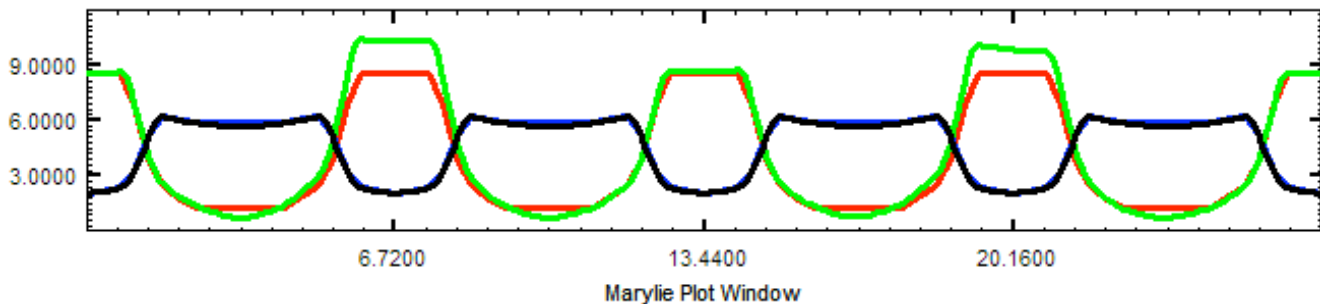


PBO Lab™ Release 2.1.3

Latest update incorporates new features and enhancements

The Particle Beam Optics Laboratory™ (PBO Lab) is a modular software package that provides an intuitive graphic user interface, fully integrated with a spectrum of standard and tested beam optics programs, and a suite of additional tools that support beamline design, accelerator operations, and personnel training. The latest update to PBO Lab includes a number of enhancements and new libraries for the TRANSPORT, TURTLE, DECAY-TURTLE, and TRACE 3-D Modules.

The new TRACE 3-D Module creates a new data file (Envelope Data) that provides the detailed transverse beam profile data used for the Graph Beam Line display window. The new Envelope Data file also contains the transverse β -functions and emittances at the same longitudinal locations as the profile data. The new file greatly facilitates the comparison of these TRACE 3-D properties with results obtained from other programs. The figure below illustrates an example of such a comparison using release 2.1.3.



Twiss β -parameters (green, black) from TRACE 3-D for one turn of a beam injected into a storage ring overlaid on top of the Courant-Snyder β -functions obtained from MARYLIE. The bend plane (green) excursions from the machine design (red) may be due to an injection mismatch.

Upcoming Conferences



AccelSoft plans to attend the following conferences as an industrial exhibitor. We invite our readers to meet members of the AccelSoft staff and to take advantage of the opportunity to ask questions, offer suggestions, and learn more about our software.

- **22nd Particle Accelerator Conference (PAC 2007)**
Albuquerque, New Mexico 25-29 June 2007
- **11th European Particle Accelerator Conference (EPAC 2008)**
Genoa, Italy 23-27 June 2008

Beamline Simulator (c)

Beamline Simulator™ 1.4

Beamline Simulator is a low-cost software package that has proven to be popular with accelerator operators and researchers actively involved in facility operations. The latest release of the Beamline Simulator application provides for the ability to save and load defined Graphics Properties. Users can define customized Graphics Properties for their particular requirements and then save those for reuse in future sessions. This capability should prove especially helpful for users who desire customized graphics displays while utilizing Beamline Simulator for "real-time tuning" simulation.



Look for the Future Release of Our New OASIS™ The Open Architecture Software Integration System™ for PBO Lab



In the not too distant future, AccelSoft will be offering a new software framework so users of PBO Lab will be able to create their own application modules.

OASIS, the Open Architecture Software Integration System, provides significant new capabilities for PBO Lab. OASIS itself is implemented as two Application Modules for PBO Lab. One is the OASIS Module Builder (or simply OModule Builder), the other is the OASIS Support Module.

The OModule Builder provides the tools and framework necessary for users to create particle optics Modules - Modules that will link the PBO Lab environment to the user's own particle optics code. The OModule Builder does not require any source code to be written; the OASIS framework provides the complete framework. User Modules created with the OModule Builder are referred to as OASIS Modules, or simply OModules.

The OASIS Support Module provides the enabling technology to PBO Lab so it can recognize and use OModules. OModules work like any other PBO Lab Application Module such as the TRANSPORT, TURTLE, MARYLIE and TRACE 3-D Modules in common use. The familiar PBO Lab graphic interface and analysis tools are seamlessly integrated with OModules so that the user experience is identical to that encountered with existing PBO Lab Modules.

Once an OModule has been created it can be utilized with any PBO Lab software that has the OASIS Support Module installed. For example, an OModule for the PARMILA (Phase And Radial Motion in Ion Linear Accelerators) program has recently been created with a prerelease version of the OASIS Module Builder. This has resulted in a prototype PARMILA OModule. This PARMILA OModule will be used with PBO Lab software installed on computers for a class being given at the USPAS (see News Bulletin below). That PBO Lab software will have the OASIS Support Module installed, but not the OModule Builder. Students will be able to interact with the PARMILA OModule just as they would with the TRANSPORT, TURTLE and TRACE 3-D Modules also planned for use in the class.

Stay tuned for announcements on the release of the new OASIS Module Builder, and on the availability of new PBO Lab OModules created with the OASIS Module Builder.

*** ACCELERATOR NEWS BULLETIN ***

The U.S. Particle Accelerator School (USPAS) will be using PBO Lab in the following June 2007 course:

Course Title: Fundamentals of Low-beta Linear Accelerators with Simulation Lab

Instructors: John Staples, George Gillespie

Location/Dates: Michigan State University June 11-15

Web: <http://uspas.fnal.gov/programs/msu/low-beta.html>

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