What's New in Ptolemy

Presented by Alan Kamas

Ptolemy MiniConference 1995

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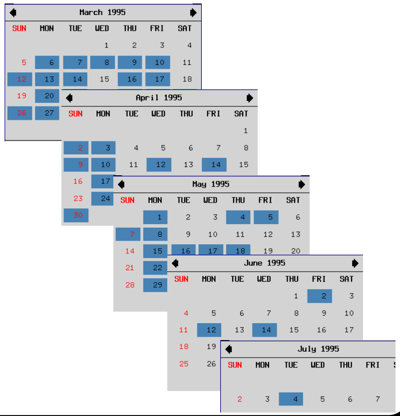
What's New in Ptolemy

- **What's new during the last year**
- **Preview of the Ptolemy 0.5.2 Release**
- **Looking forward to Ptolemy 0.6**



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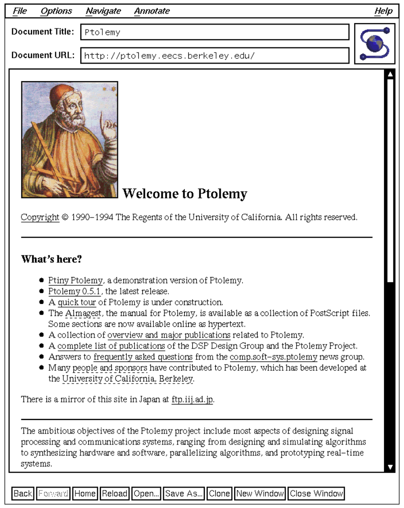
What's New This Year

- **New Releases**
  - Ptolemy 0.5
  - Ptiny 0.5
  - Ptolemy 0.5.1
- **New Ports**
  - Solaris 2
  - HP-Precision Architecture
  - Silicon Graphics Irix 5
  - Linux (PCs)
- **World Wide Web site**
  - http://ptolemy.eecs.berkeley.edu



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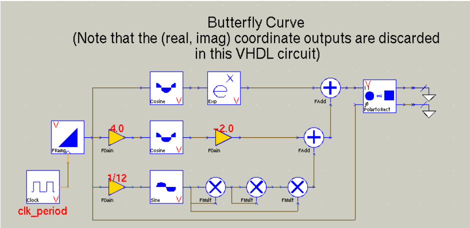
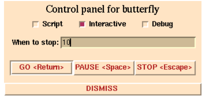
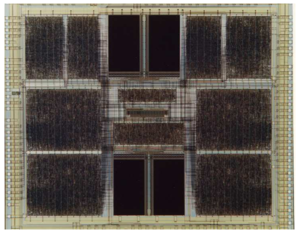
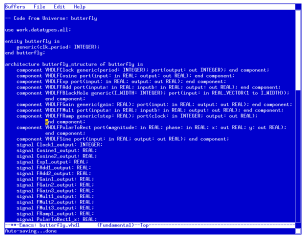
What's New This Year

- **New Domains**
  - Boolean DataFlow
  - Message Queue
  - Multidimensional Data Flow
  - Silage Code Generation
  - Sproc Code Generation
  - VHDL Code Generation









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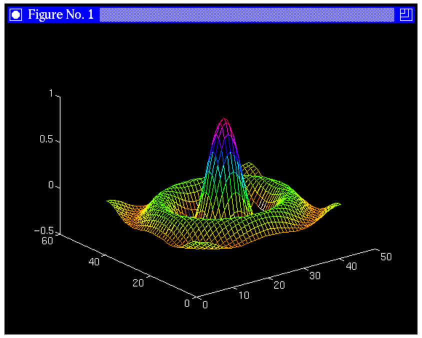
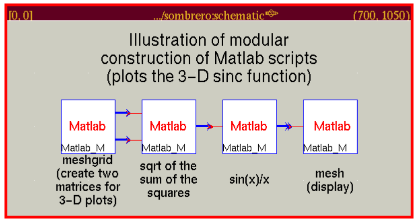
What's New This Year

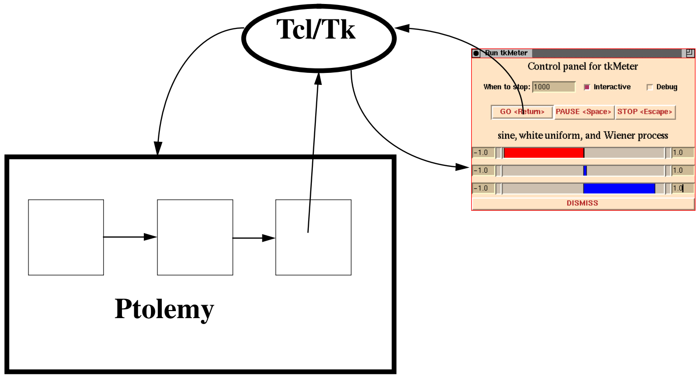
- Fixed Point Class
- Matrix Class
- Higher Order Functions
- Matlab Interface
- Initializable Delays





What's New This Year

- New Event Driven Graphical User Interface
  - animated runs and displays
  - each star has access to Tcl and Tk



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The Ptolemy 0.5.2 Release

Ptolemy 0.5.2:

- Alpha release planned for March 1995
- Ptrim - Medium sized version of Ptolemy
- Speed Improvements
- Scripted Runs
- Conditional Breakpoints
- New Graphics and Animation
- Higher Order Functions in the C Code Generation domain
- Fixed Point in the C Code Generation domain
- New Image Processing stars

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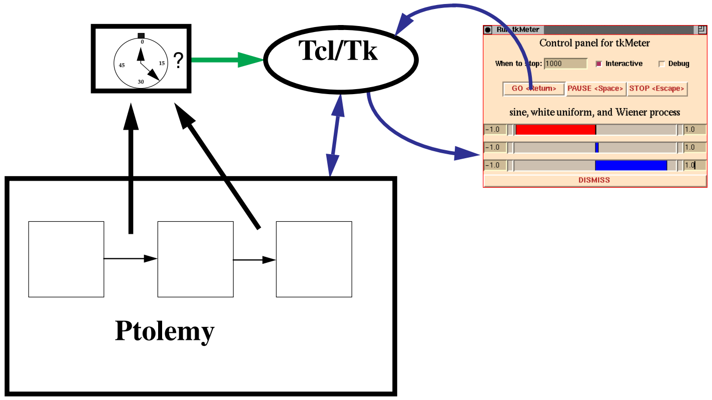
The Ptolemy 0.5.2 Release

- Speed Improvements
  - Timer Based Event Loop
  - Optimally checked for user actions
  - Ensures both interactivity and efficiency



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The Ptolemy 0.5.2 Release

- Scripted Runs
  - Can use any tcl commands to control the run
  - Star parameters can be set by Tcl
  - Control structures such as “For” and “While” loops
  - Multiple runs with Varying parameters

```
set position 0
foreach freq {PI/100 PI/200 PI/400} {
 setstate singen1 frequency $freq
 setstate XMgraph.input=11 \
          option “=800x300+0+$position -0 x”
 incr position 300
 run 400
 wrapup }
```

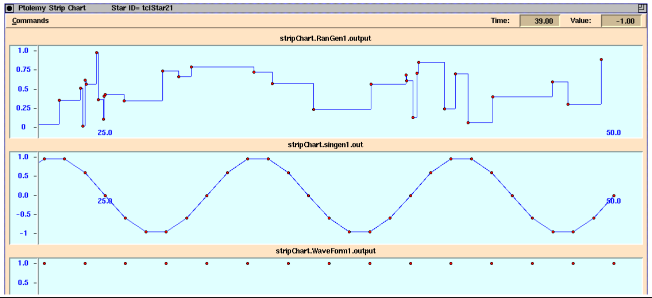

The Ptolemy 0.5.2 Release

- Conditional Breakpoint Star
  - Executes Tcl script if the inputs reach the specified condition

```
set noise 1.5
set fd [open /tmp/xmitber_results w]
ptkInform .xmitber “Running simulation with noise level $noise”
while {$noise >= 0.7 } {
   setstate AWGNchannel1 noisePwr $noise
   run 100000
   set error_rate [expr 40.0/[schedtime]]
   ptkInform .xmitber [format “noise = %4.2f   symbol error rate = %f” $noise $error_rate]
   puts $fd “$noise $error_rate”
   wrapup
   set noise [expr $noise - 0.10]
}
close $fd
exec pxgraph -tk -bb =800x400+0+0 -t probability_of_error /tmp/xmitber_results
exec rm  /tmp/xmitber_results
ptkSafeDestroy .xmitber
```


The Ptolemy 0.5.2 Release

- Graphics and Animation Demonstrations
  - Buttons
  - Eye Diagram
  - Phased Array
  - DE: Strip Chart
  - DE: Display Demonstration
  - CGC: Noisy Sine (HOF in CGC)



The Ptolemy 0.5.2 Release

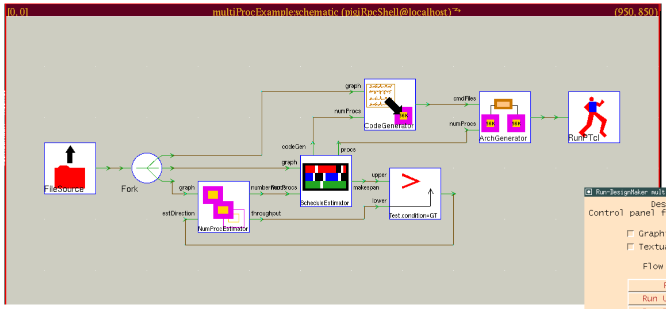
- Image Processing Demonstrations
  - Dither
  - Edge Detection

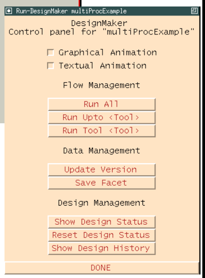
Preview of Ptolemy 0.6

Ptolemy 0.6 will contain a *subset* of

- Design Methodology Management
- New Code Generation Schedulers and Interfaces
- Process Networks Domain
- VHDL retargeting
- Esterel Interface
- Finite State Machine Controller
- Mathematica Interface for Symbolic Computation
- RS6000 Port
- Improved Test Suite

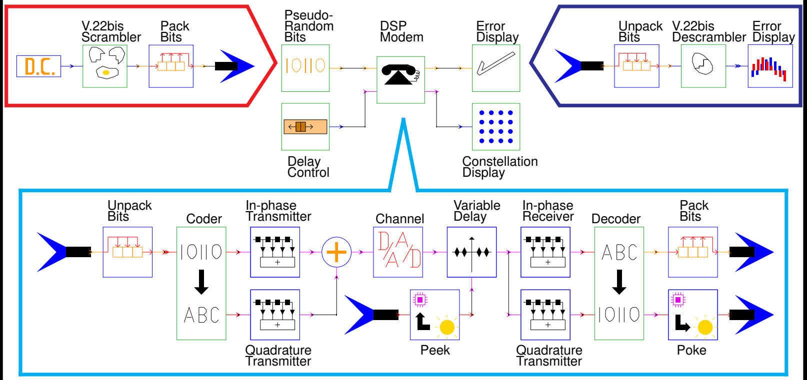
Preview of Ptolemy 0.6





- Design Methodology Management Domain
  - Structure to support tools like the Design Assistant
- Design Assistant
  - HW/SW codesign starting from an SDF description
  - Partitioning Tools
  - Synthesis of Hardware, Software, and the Interface between them

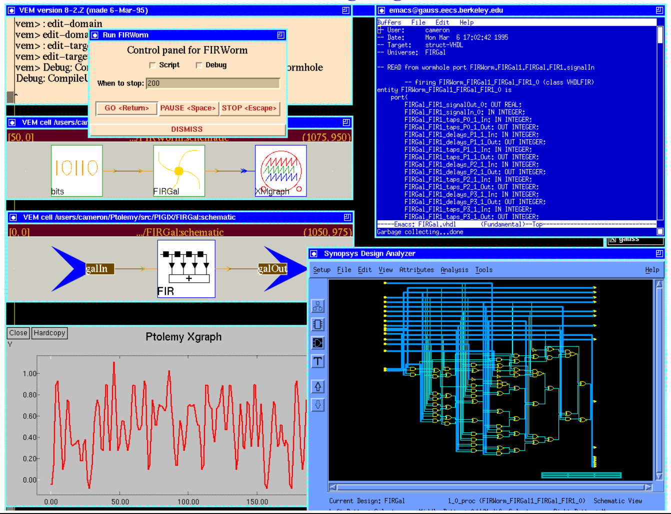
Preview of Ptolemy 0.6



- Heterogeneous Hierarchical Schedules for Code Generation
- Code Generation Wormhole
- Galaxies to Stars
  - compile Code Generation galaxies into a single star

Preview of Ptolemy 0.6

- VHDL Code Generation for Simulation and Synthesis
  - new VHDL stars
  - retargeting from DataFlow to VHDL



Looking Further into the Future

Publications

- **Look to our WWW site for the latest Ptolemy publications**
  - **http://ptolemy.eecs.berkeley.edu**
  - **f(x): ptolemy.eecs.berekeley.edu /pub/ptolemy/papers**

Discussion Groups

- **Newsgroup**
  - **comp.soft-sys.ptolemy**
- **Mailing List**
  - **ptolemy-hackers@ dewitt.eecs.berkeley.edu**