



PCaPAC Satellite Workshop

~ **High Level Applications Development and the Matlab Middlelayer** ~

Sponsored by the Canadian Light Source

Saskatoon, Canada

October 5, 2010



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Agenda

- 9:00 Welcome and High Level Application Primer - Jeff Corbett/SLAC
- 9:15 Matlab Middle Layer: Nuts, Bolts and New Directions - Greg Portman/LBL
- 9:45 High Level Application Development at the ESS - Todd Satogata/BNL
- 10:15 *General Discussion*

- 10:30 Break**
- 11:00 Introduction to Web Services in High Level Applications - Debby Quock/APS
- 11:30 Matlab Middle Layer Toolkit at NSLS-II - Goubao Shen/BNL
- 12:00 *General Discussion*

- 12:30 Lunch**

- 2:00 Client/Server Communications for High Level Applications - Nikolay Malitsky/BNL
- 2:30 Application of MATLAB for CLS Accelerator Operations - Ward Wurtz/CLS

- 3:00 Break**
- 3:30 Middlelayer Scripting Tools for Beamline Control - Andres Pazos/EMBL
- 4:00 Application of MATLAB at CLS Beam Lines - Russ Berg/CLS
- 4:30 *General Discussion*

- 5:00 Adjourn**

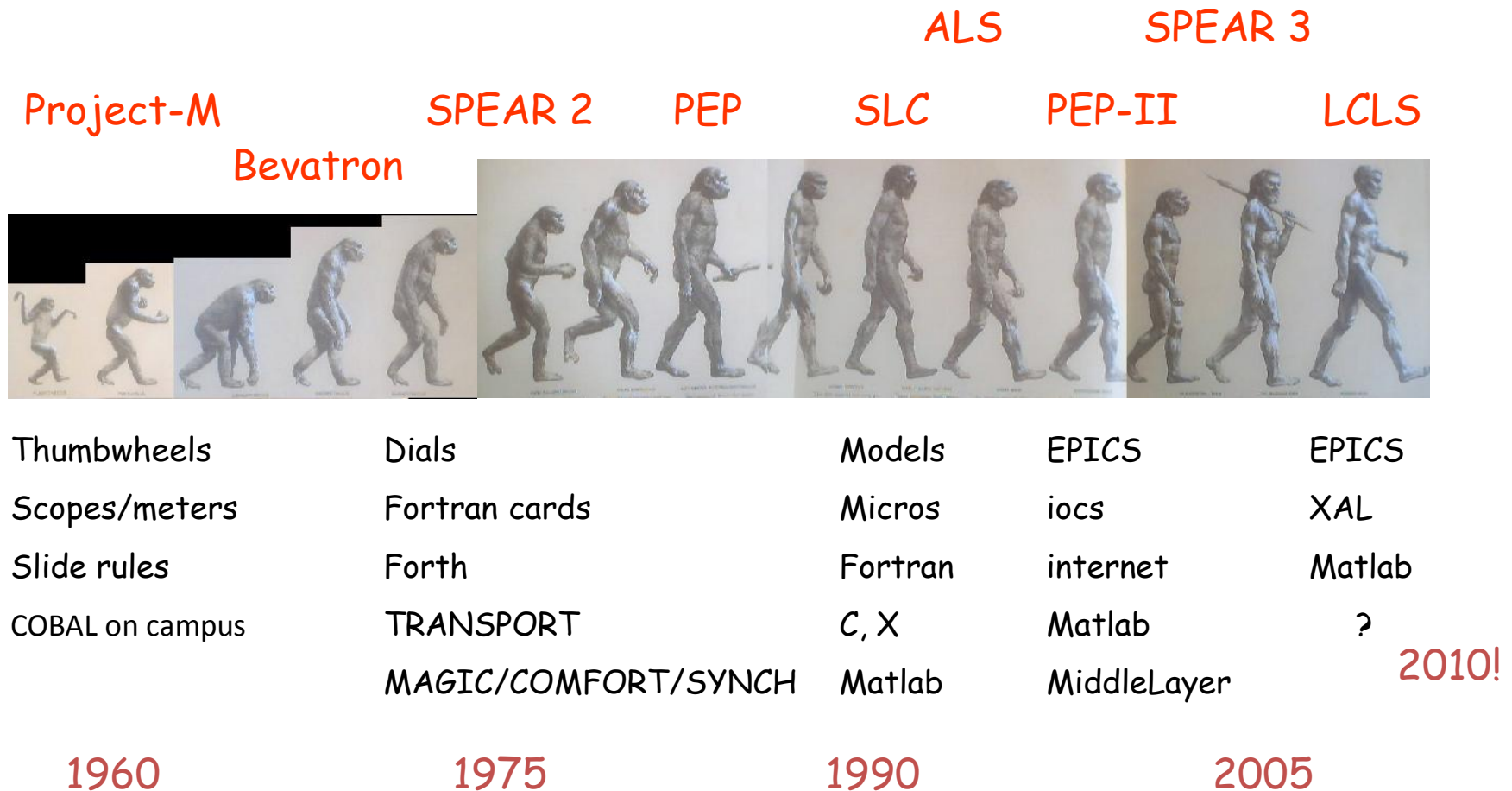
- 7:00 Cocktail Hour

Workshop Philosophy

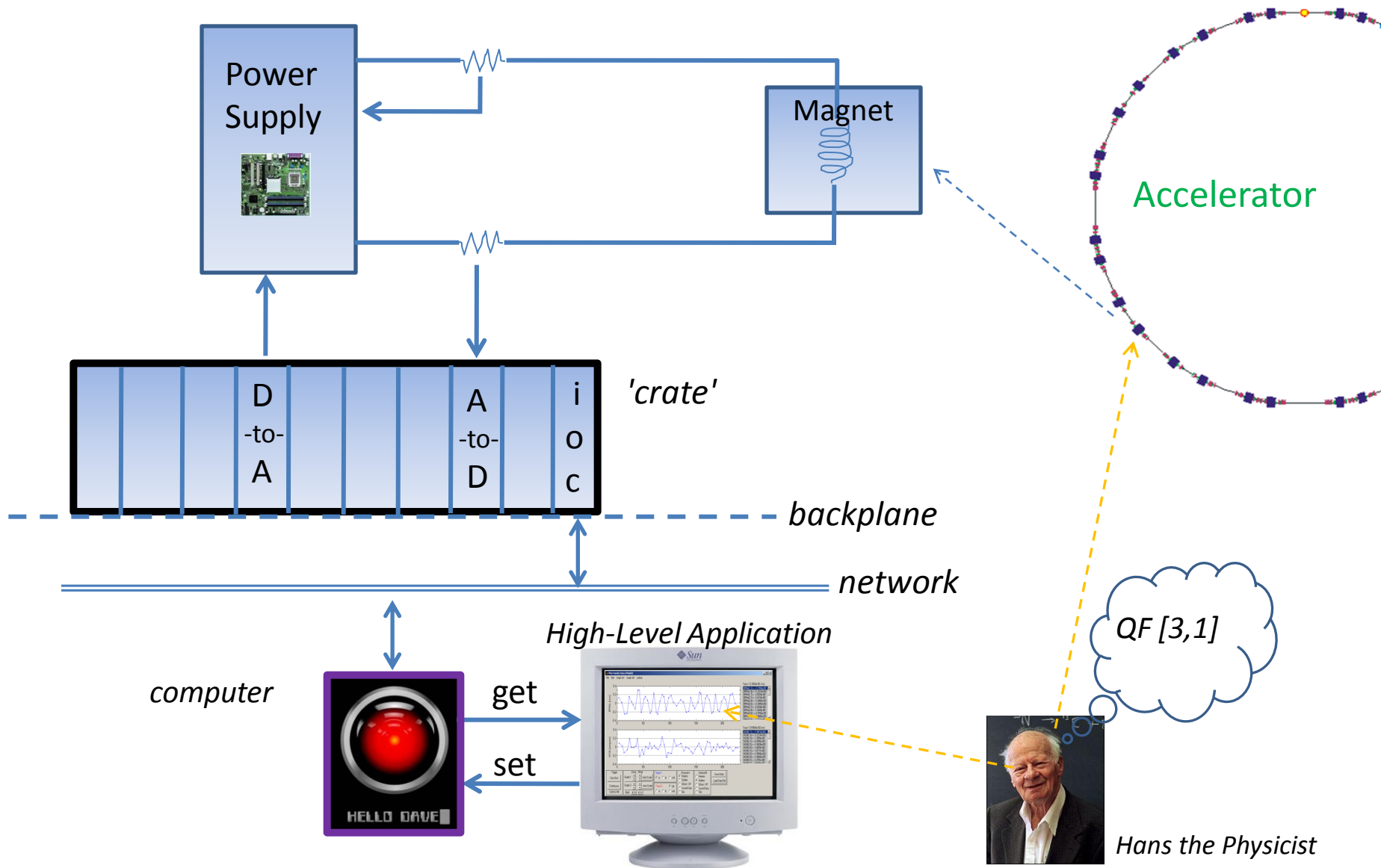
- Current work
- Directions
- Discussion for the Future Developments

most important - 'open forum'

Evolution of Control Systems (SLAC/LBL)



Man-to-Machine Connection



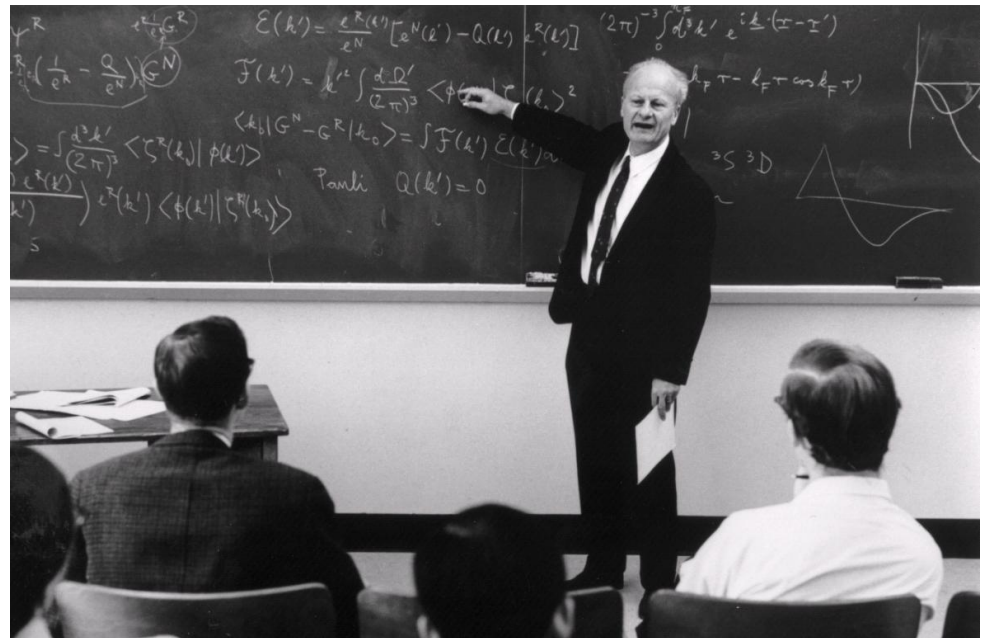
Example: Knobs, Sliders and Virtual Reality

What does Hans want to do?

What does Hans want to see?

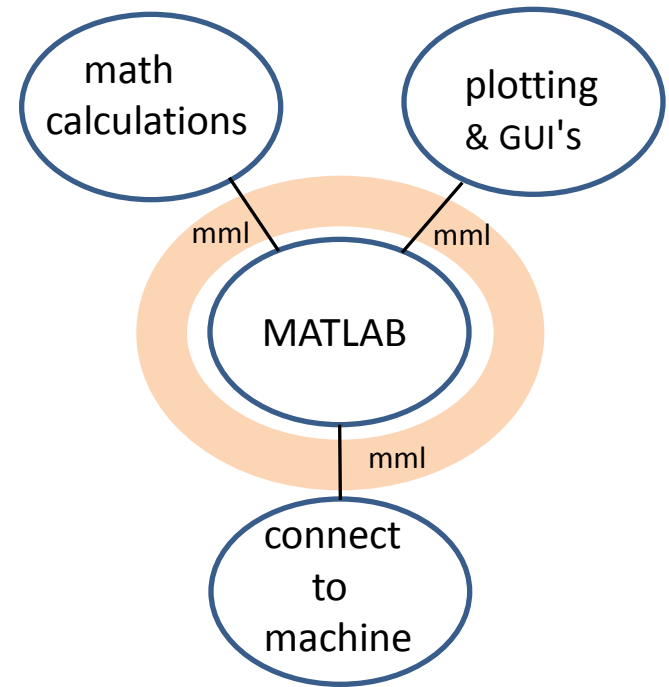
What does Hans want to access?

Thought/predictive: Model-based vs empirical



Why MATLAB?

- Matrix programming language
- Command-line driven (no compile/link)
- Easy cut/paste, debug
- Built-in math libraries
- Compact code, easy to read, easy to test/debug
- Workspace for experiment and development
- Easy to import/export data
- Graphics capability (plotting, applications)
- APS circa 2000: "we write scripts during shifts"



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Thank you to our Sponsors and exhibitors

