# **VISPA** Direct Access and Execution of Data Analyses for Collaborations

Christian Glaser, Martin Erdmann, Robert Fischer, Daniel von Asseldonk, Marcel Rieger, Gero Müller, Martin Urban, Thorben Quast Contact: glaser@physik.rwth-aachen.de

## Data Analysis in a Web Browser

Graphical front-end to your infrastructure

 → Makes your software, data and computing resources available through the web
 → Usable from any system

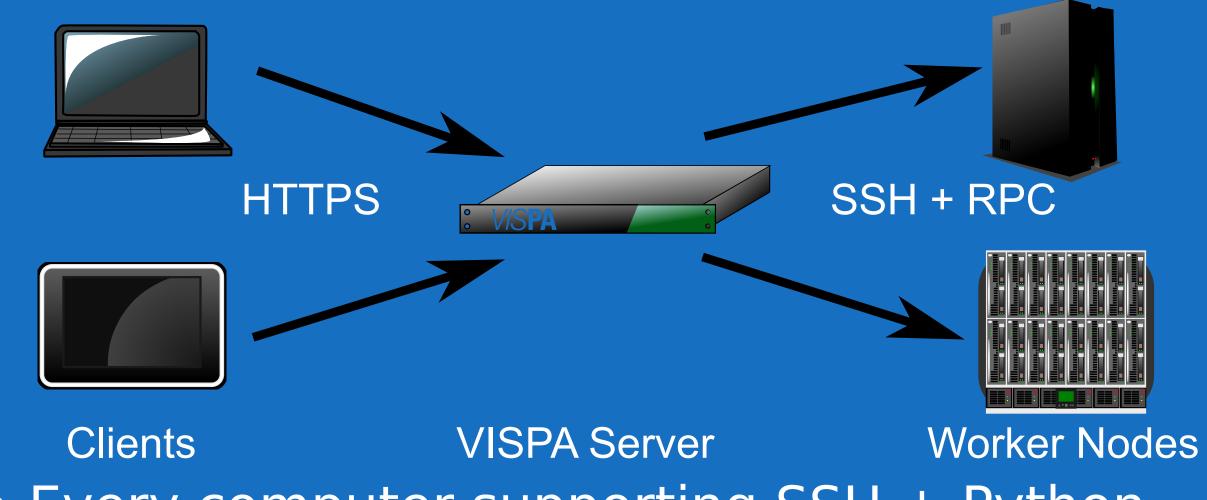
Base functionality provided

→ User management

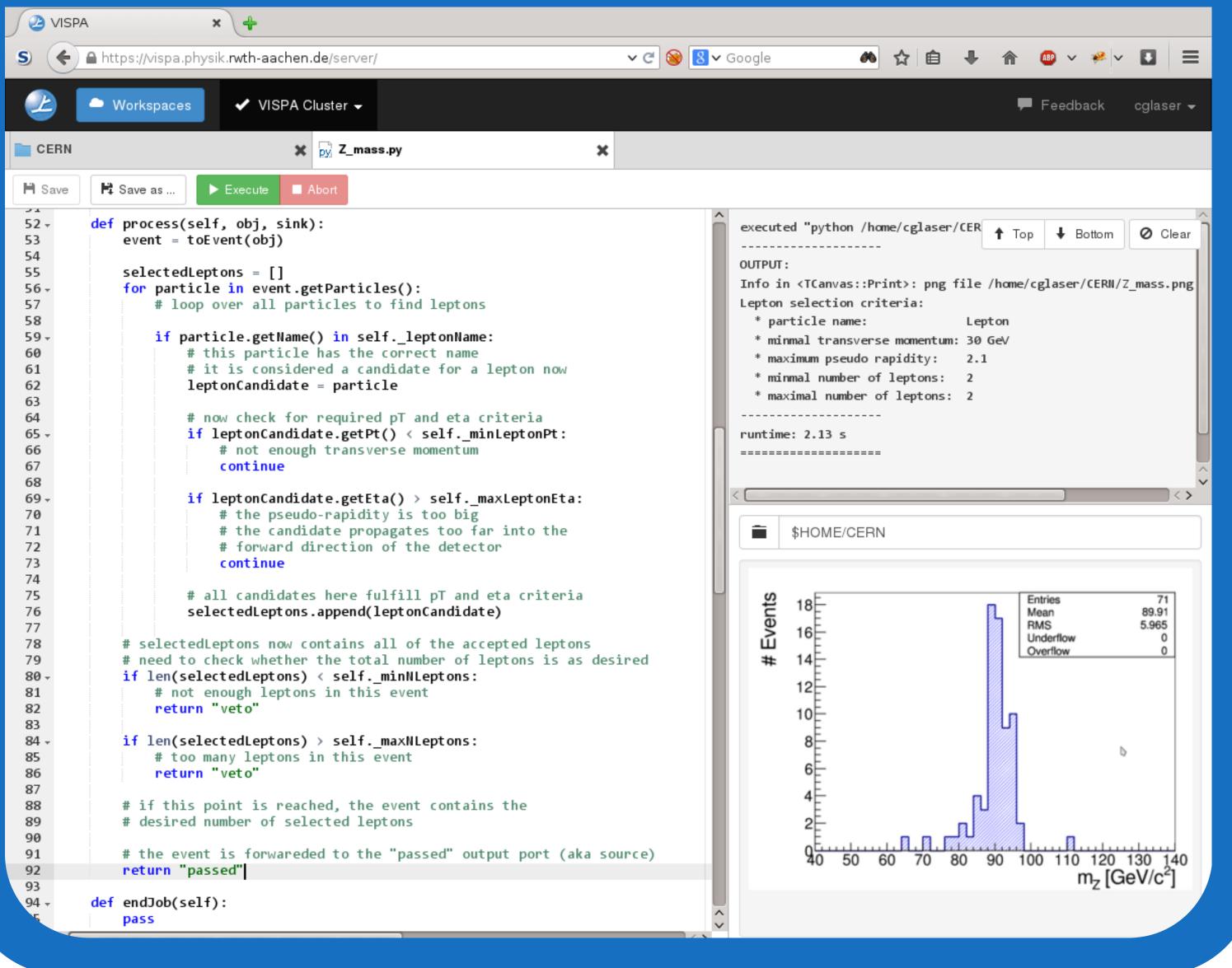


### What's new?

- Complete GUI redesign
  - → Look and feel of a desktop software
  - → Frequently used operations are accessible with a single mouse click or a shortkey
- Preference system for individual taste
- Code editor with direct Python script execution
- → Apps: file browser, terminal, code editor
   System is extendable with own apps using most common web technologies
   → HTML5, CSS3, jQuery, bootstrap, template rendering
- Scaleable



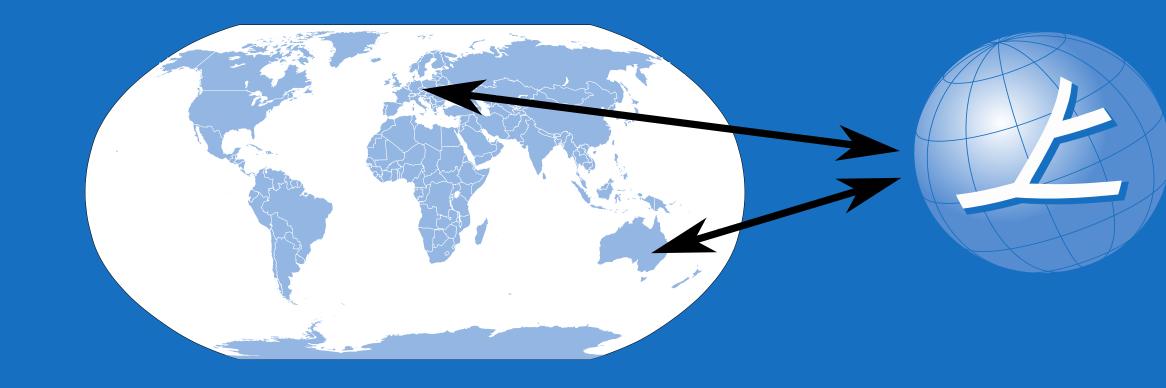
- → Every computer supporting SSH + Python can be used as worker
  - → Bootstrap method: worker is configured automatically



#### Use cases

#### **Collaborative analysis**

- Review and execute a colleague's analysis with just one click
- Joint analyses:
  - → Directly on shared files or through a repository
  - → No seperate system setup necessary



# University education Data analyses in experimental physics lectures [1]

#### **Pierre Auger Observatory: Event Reconstruction**

- Graphical steering of the analysis framework "Offline" [2]
- Direct job submission to different batch systems

🥑 🗢 Workspaces 🗸 local 🗸				cglaser 🗸	
SHOME X Auge	r Offline 🗙				
submit job 🖆 open bootstrap.xml 🖆 open module sequence 🗎 save XML files 💾 save ModuleSequence C reset all module options to default Set all infolevel to					
- ✓ Steering Symbols	Module Sequence	RdChannelResponseIncorporate	or		
- ✓ All Modules	1 try	Option	Value	Unit	
	\$\mathcal{L} SdHorizontalReconstruction	InfoLevel	1	С	
- Fd Modules	try stop	ForwardResponseOnFirstCall	0	C	
<ul> <li>Hybrid Reconstruction Modules</li> </ul>	RdEventInitializer	InverseUpperFrequencyLimit	80	C megahertz C	
- Radio Modules	RdStationRejector				
	RdChannelADCToVoltageConverter	InverseLowerFrequencyLimit	30	C megahertz C	
RdAntennaChannelToStationConverter	‡RdChannelSelector	OverrideForwardBandLimits	0	C	
RdAntennaStationToChannelConverter	‡ RdChannelPedestalRemover	NumResponsesToCache	500		
RdChannelADCToVoltageConverter	RdChannelResponseIncorporator			С	
RdChannelAmplitudeCalibrator	\$\mathcal{L}\$ RdChannelBeaconSuppressor	ForwardLowerFrequencyLimit	30	C megahertz C	
RdChannelBandpassFilter	\$\mathcal{F}\$ RdChannelTimeSeriesTaperer	OverrideInverseBandLimits	0	С	
RdChannelBandstopFilter	\$\mathcal{P}\$ RdChannelBandstopFilter	ForwardUpperFrequencyLimit			
RdChannelBeaconSimulator	‡ RdChannelUpsampler	rorwardopper requencyLimit	80	C megahertz C	
RdChannelBeaconSuppressor	<pre>\$ loop (numTimes=unbounded)</pre>				

#### **CERN outreach**

 Public data and example analyses available through web platform

RochannelBeacon LimingCalibrator	- Habireetterreentergeneeenterter	
RdChannelDebugWriter	‡RdAntennaChannelToStationConverter	
RdChannelLinearPredictorRFISuppressor	‡RdStationSignalReconstructor	
RdChannelMedianFilter	‡ RdClusterFinder	
RdChannelNoiseASCIIExporter	↓ RdPlaneFit	
	↓ loop stop	
← SD Reconstruction Modules	‡ RdLDFMultiFitter	
- SdHAS Modules	\$ RdChannelRiseTimeCalculator	

BdDirectionConvergenceChecker

