



Go4 version 4.4

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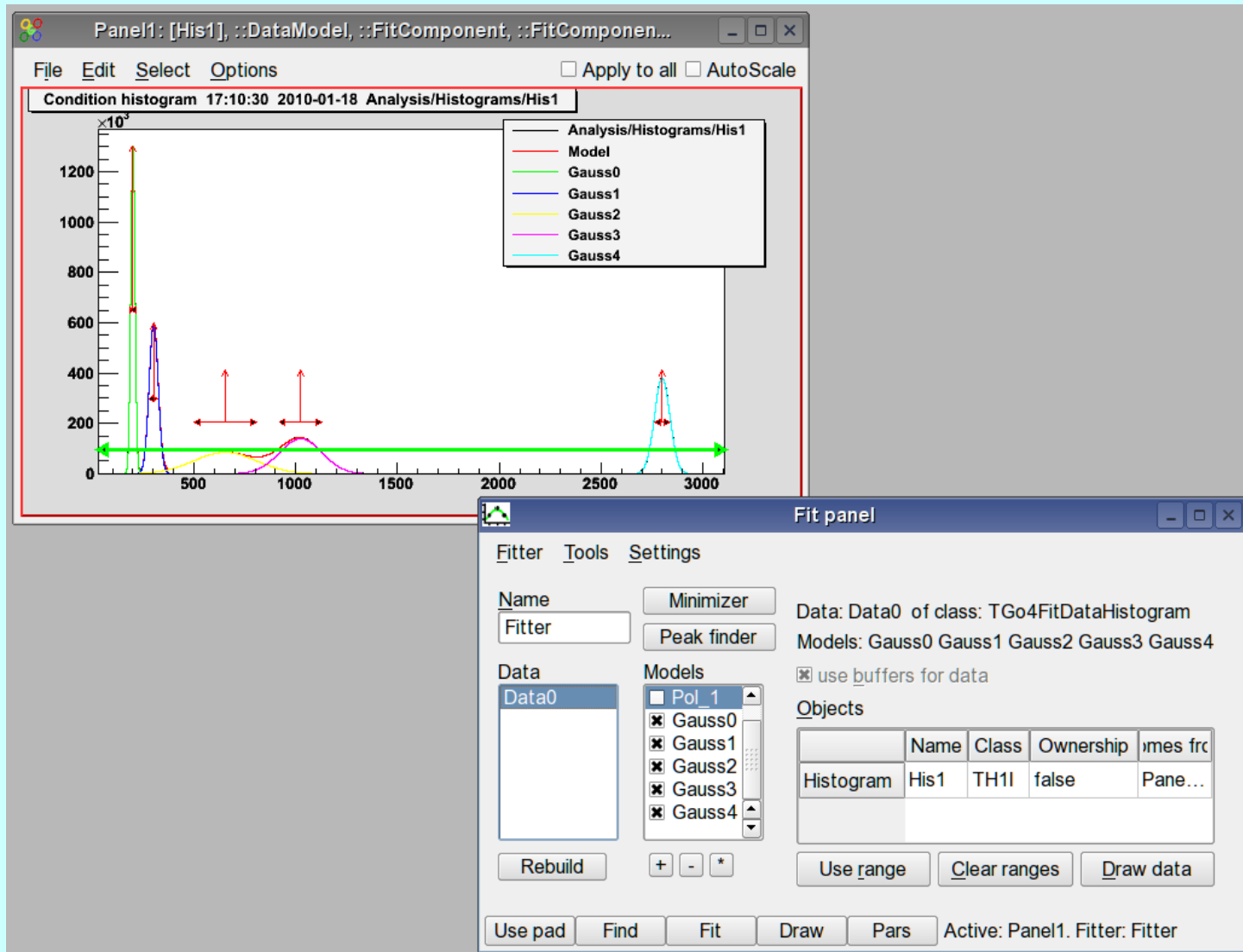


Fitting in Go4

- **Fit panel in Go4**
- **Use of TGo4Fitter in macro**
- **Reuse of fitter in GUI / Analysis**



Fit panel





Main features of fit panel

- Fitting of histograms / graphs for any kind of model
- Peak finder
- Manual change of model components / fit parameters
- Fitting and parameters view, parameters output
- Fit panel menu commands
- Different display modes:
 - show only model
 - show model components
 - use different panel for drawing
- Store fitter in file



Using TGo4Fitter in macros

- Can be used without rest Go4 framework
- Just `gSystem->Load("libGo4Fit.so")` before usage
- `$GO4SYS/Go4FitExample` package with many different examples of TGo4Fitter usage
- Can be used as macros or compiled into executable



Example1 from Go4FitExamples

```
// create fitter, select fit function and add standard actions list
TGo4Fitter fitter("Fitter", TGo4Fitter::ff_ML_Poisson, kTRUE);

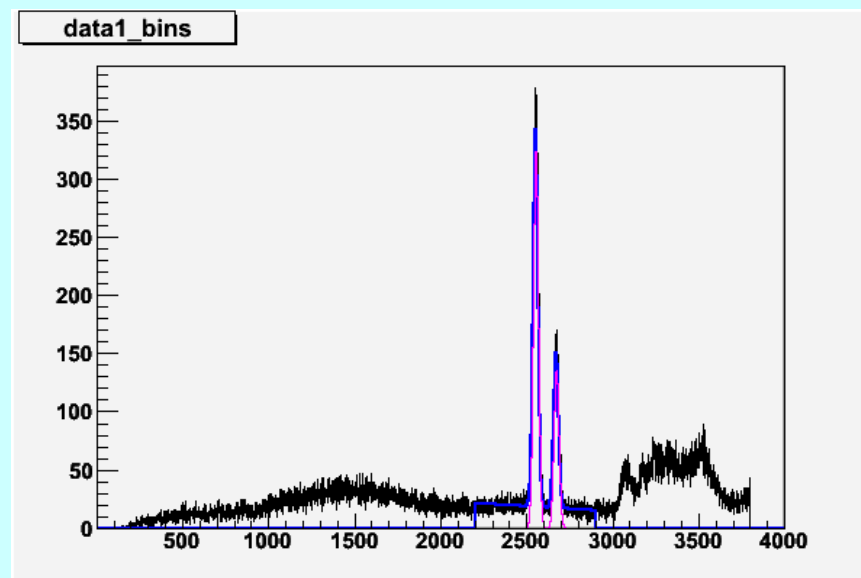
// add histogram to fitter, which should be fitted
fitter.AddH1("data1", GetHistogram("hDeg120_P_c"), kTRUE, 2200., 2900.);

// create polynom of first order
fitter.AddPolynomX("data1", "Pol", 1);

// create two gaussians
fitter.AddGauss1("data1", "Gauss1", 2553., 15.);
fitter.AddGauss1("data1", "Gauss2", 2672., 15.);

// execute all actions
fitter.DoActions();

// draw data, full model and two gaussians
fitter.Draw("#data1,Gauss1,Gauss2");
```



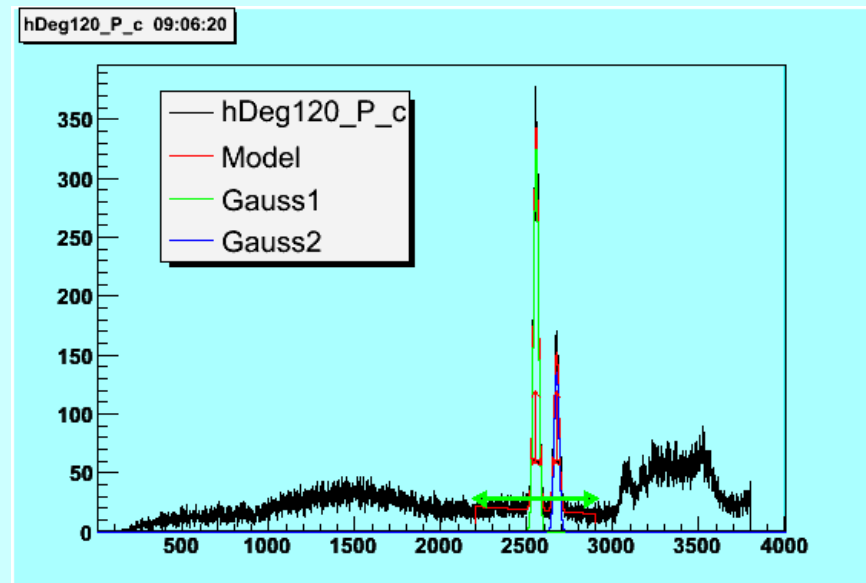


Reuse of fitter in GUI

- Store fitter in macro:

```
TFile* f = TFile::Open("fitter.root","recreate");  
fitter.ClearObjects(0, kFALSE); // do not store histos with fitter  
fitter.Write();  
delete f;
```

- Load file with fitter in Go4 browser
- Drop fitter on histogram to be fitted
- Press **Fit** button





Reuse of fitter in macros

- Do fitting in fit panel
- Store fitter in file (via browser)
- Load fitter in macro and assign histograms:

```
// read fitter from file
TFile* f = TFile::Open("fitter2.root");
TGo4Fitter* fitter = (TGo4Fitter*) f->Get("Fitter");
delete f;
if (fitter==0) return;

// set histogram in fitter
fitter->SetObject("data1", GetHistogram("hDeg120_P_c"), kTRUE);

// make fitting
fitter->DoActions();

// just draw fitter
fitter->Draw("#data1,Gauss1,Gauss2");
```

- Repeat fitting as many time as necessary



Advanced using of TGo4Fitter

- Simultaneous fit of several histograms
 - Fitting model definition via TFormula, sample histogram or shared library
 - Different range settings
 - Two-dimensional histograms fit
 - See Fit tutorial on Go4 webpage
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- Most are supported by “Expert” mode in the Fit panel