
Subject: Re: Stt external library glpk
Posted by [Gianluigi Boca](#) on Tue, 09 Feb 2010 12:33:46 GMT
[View Forum Message](#) <> [Reply to Message](#)

Stefano Spataro wrote on Tue, 09 February 2010 09:40
And another question: do we really need to use glpk inside our code? I suppose root classes are doing the same job, or maybe there is another reason?

Hi,
yes there are a couple of essential reason.

As far as I know there is no equivalent to GLPK in root.

GLPK is a package for performing minimizations of some function that is linear in the parameters to fit AND ALSO in the case when some of the parameters are INTEGER variables.

This branch of the minimization programming is called Mixed Integer Linear Programming (MILP) as I explained in many presentations on the STT pattern recognition.

So GLPK is a package for doing MILP.

The main reason why I chose it is that it is superfast compared to Minuit, so I can use it in the pattern recognition.

Also MILP has the nice feature that, thanks to the use of some integer variable, enables to :

- a) resolve the left-right ambiguity typical of the straw tubes;
- b) eliminate those hits which are clearly noise, automatically already in the fit.

Without GLPK the STT real pattern recognition doesn't work.

Cheers Gianluigi