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Subject: Re: the simulation of  $\text{ep} \rightarrow \text{e} \Delta(1910)^+$ ,  $\Delta(1910)^+ \rightarrow \text{Sigma}(1385)^0 \text{K}^+$

Posted by [Ingo Fröhlich](#) on Fri, 29 Apr 2016 15:58:10 GMT

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Hi,

I think you are not doing the decay correctly. For each decay Pluto needs a "primary model" which is doing the mass sampling of the parent. So what you need is not distribution (which is changing the shape of a decay), but a model which samples the mass of the dilepton.

These classes are inherited from `PChannelModel` (instead of `PDistribution`).

For each decay, Pluto attaches one single channel model to each decay channel. If no custom model is added (as said the object "sigmadecaytoLee" is not registered as a model), Pluto loops over the existing classes and try to do its best. And therefore it chooses `PDalitzDecay` but not your custom class.

One can see this very nicely in `PDalitzDecay`, that it is inherited from `PChannelModel`. Maybe you could use this class as a template for a new decay?

If you now construct your own decay model, the one thing one has to know: either one adds the decay key as a last option by hand in the ctor (not recommended) or one can let Pluto find out which is the correct key by using the following syntax for the id ("sigma13850\_to\_e+\_e-\_lambda\_matrix" in your case):

`id@parent_anything_list_of_daughters`

with "id" and "anything" as arbitrary names, and "list\_of\_daughters" the underscore separated list of daughters

e.g. `mysigma13850decay@sigma13850_to_Lambda_dilepton`