Matched filtering for EASIER data

Abstract

We introduce in this note the method of matched filtering to EASIER data.

1 Introduction

The IPN software is inherited from a Karlsruhe software that was adapted by Francesco for EASIER and then modified by Olivier and Imen to introduce their way to compute the MBR signal. We aim at giving an overview of the functionning of the software here.

2 Checks

Here we compare the results we obtain with others.

2.1 Gorham shower

Gorham shower, or the reference shower is a vertical, 3.36 10^{17} eV shower, observed at 10 km.
The flux originally calculated in [1] is $F_{ref} = 2.77\ 10^{-24}\ W.m^{-2}.Hz^{-1}$.
We simulate the reference shower and record the flux at several distances. The results are given in figure **??**. We have set the units the same way than in in [2].

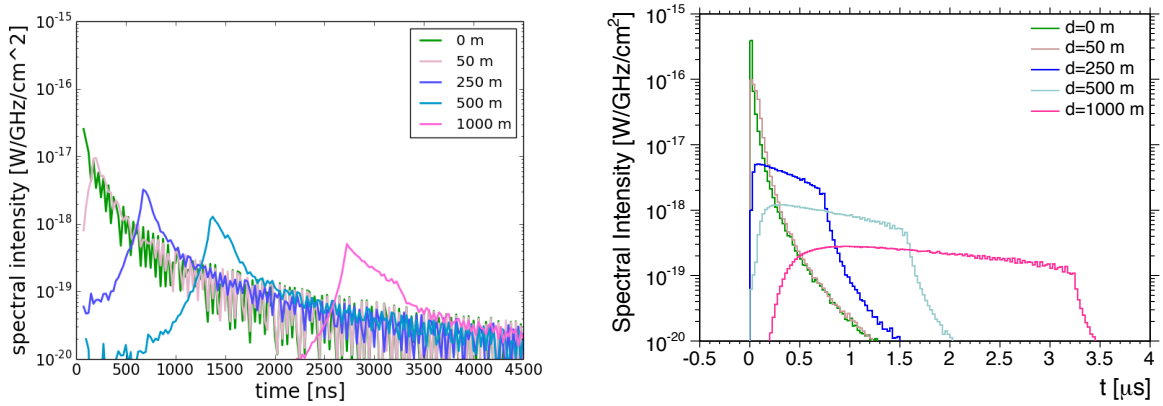

Figure 1 three example of simulated trace with on top of each figure the signal in ADC counts, and on the bottom the signal in sigma

References