Proposals for Masterclass at Erice

AM 2017 05 10

Introduction to Statistics and Data Treatment

Statistics and Probability:
a short introduction

The lecture should be focused on items related to the Masterclasses

By Marina and Paola

DQM Masterclass

1st hour:

- a selection of plots from DQM explained

- an online (teamviewer) acces to a telescope for a real shift

→ schools with and without a telescope could agree on regular remote shifts

2nd hour: each group gets in charge a set of plots they have to find and comment.
10 groups will comment at Erice.
Others can discuss at the various RUN meetings (homeworks!)

By Daniele

Building orientation vs North

A measurement of the angle vs North
for a wall of a building in Erice.

Pros:
- very involving, like a game among groups
- we can plot statistics out of 50 measures!

Cons:
- difficult to be implemented
because of numbers
- we should find
a flat pavements,
rare in Erice
(maybe the Church
with a big parking in front)

Forbush and solar activities

1st hour:

An introduction to the Physics
Then focusing on one aspect.
The barometric correction.

2nd hour:

All groups download data from a real
telescope (1 day)
And extract corrections.

Then results are discussed

We should have a good statistics
(50 corrections, almost all telescopes)!

By Ivan

Shower Monte Carlo

1st hour:

The MC Masterclass
(maybe one can add few tasks:
for example the disk thickness)
And focusing on Erice

2nd hour:

All groups analyze data from a different
shower, maybe with different tasks.

Then results are discussed by a subsample
While the others can discuss during RUN
meetings (again homeworks)

By Maria Paola

Coincidences Msterclass

1st hour:

A regular lecture on coincidences

By Edo

2nd hour:

Involving students in a game
Simulating the coincidences among noisy
detectors or telescopes
Practically demonstrating
through a game
how probability
suppresses spurious coincidences
allowing discovery

by Lorenzo

Let's build the program.

Just a comment.

Games could be a powerful tool
for learning