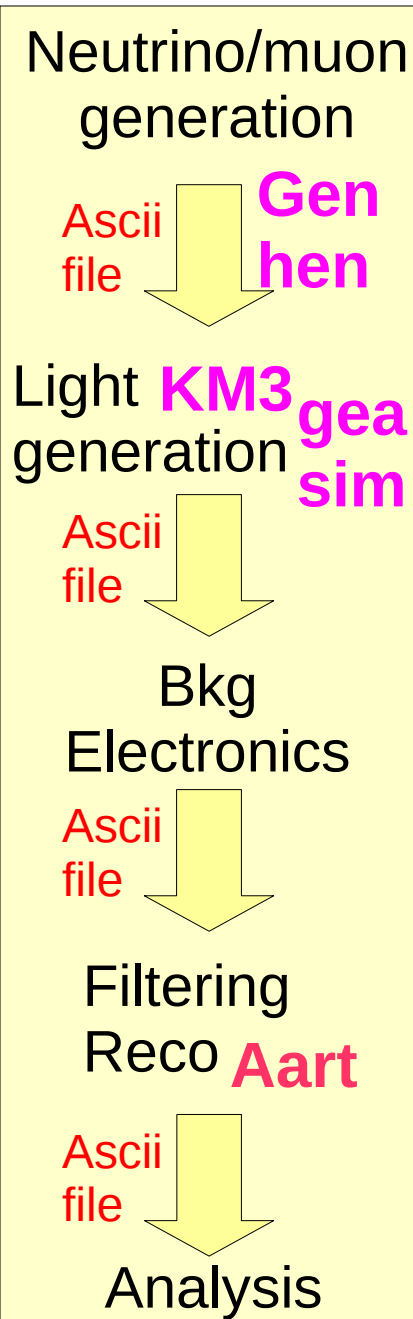
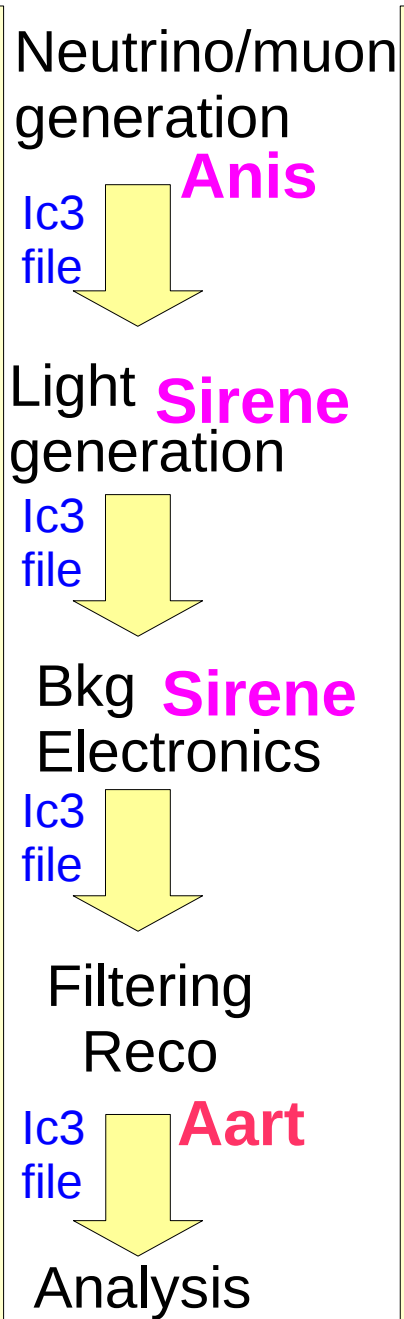


DISCUSSION session

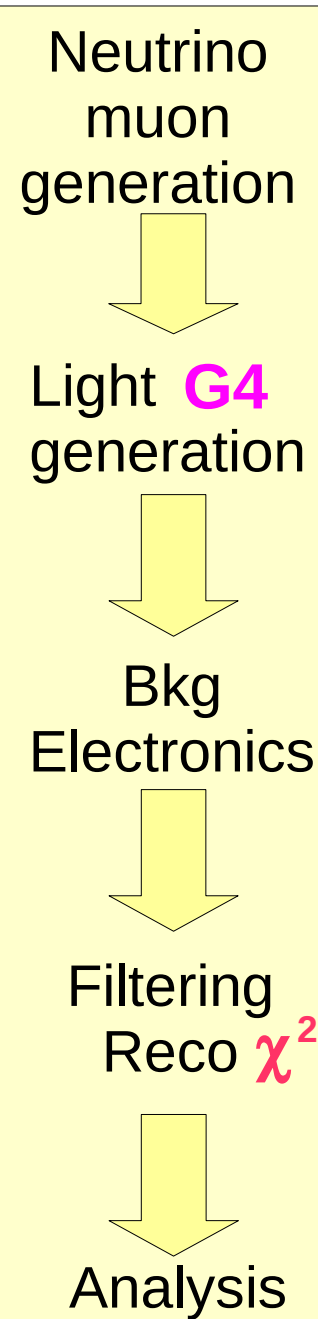
ANTARES
NEMO
soft



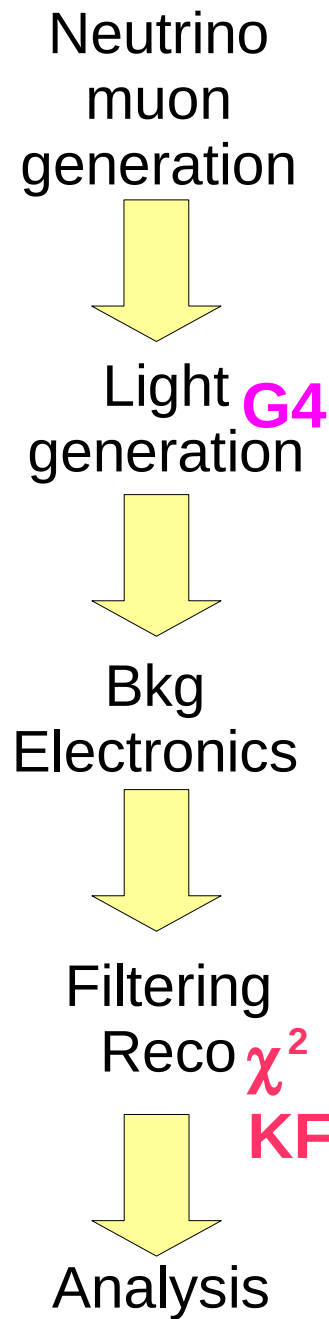
KM3TRAY



Chameleon
Demokritos
NESTOR soft
ROOT based

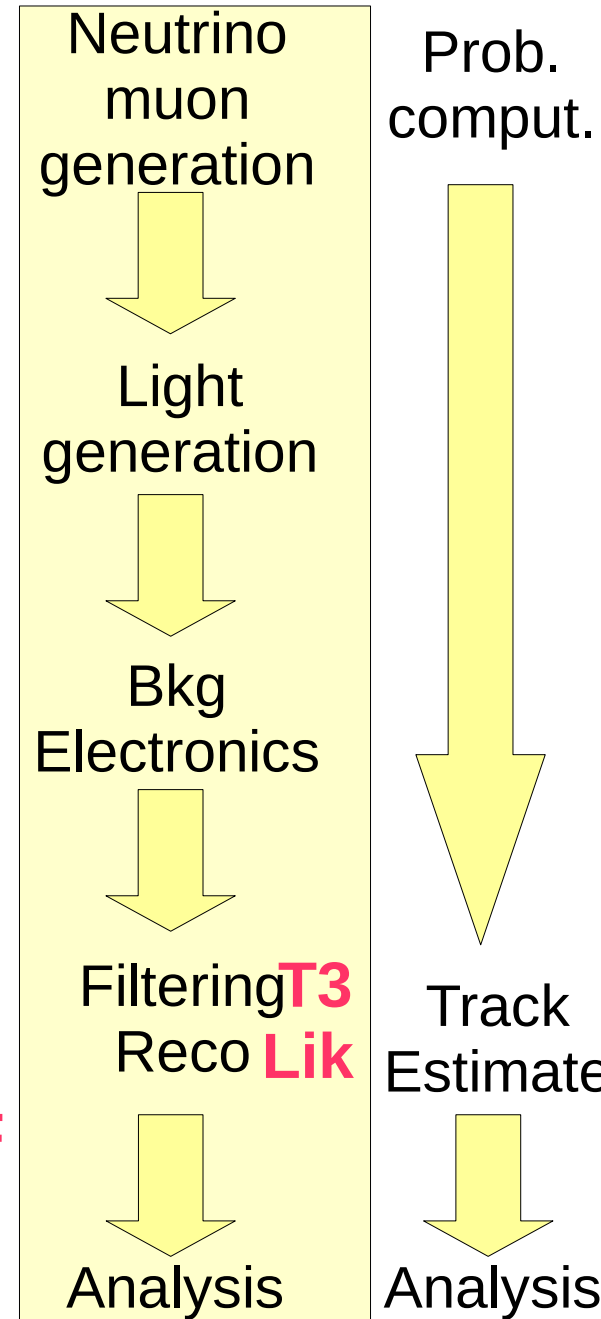


HOU
soft

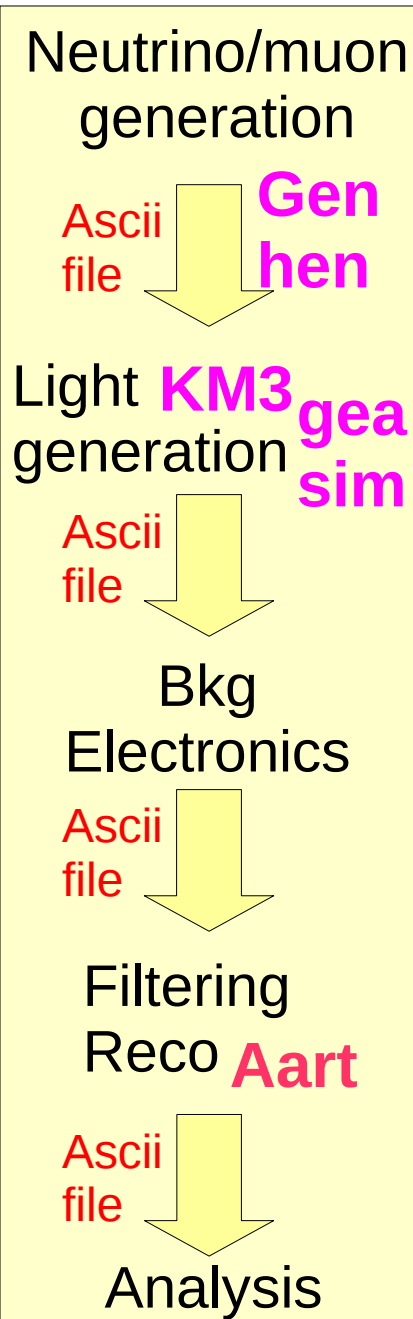


Mathematica

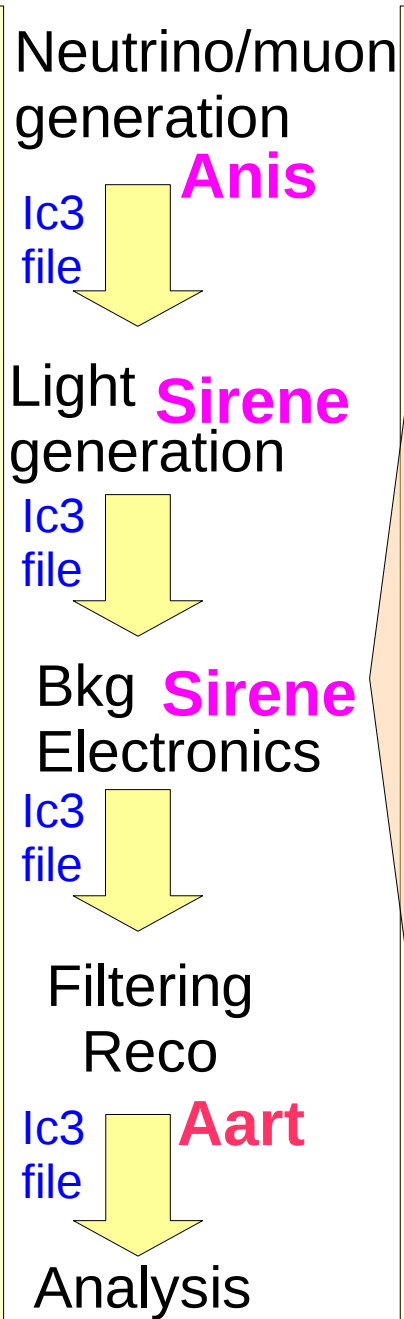
NESSY **FastTool**



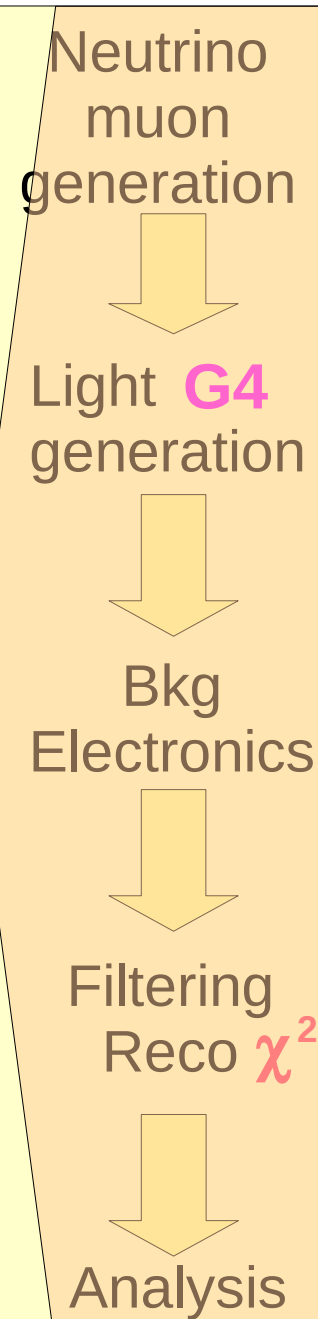
ANTARES
NEMO
soft



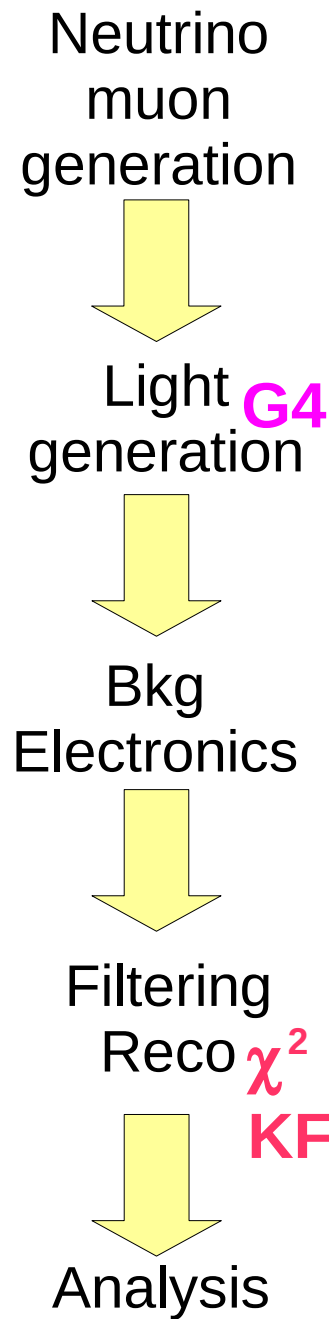
KM3TRAY



Chameleon
Demokritos
NESTOR soft
ROOT based

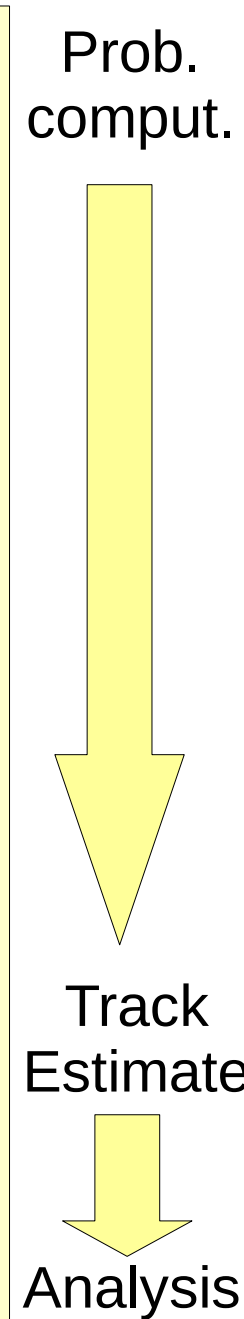
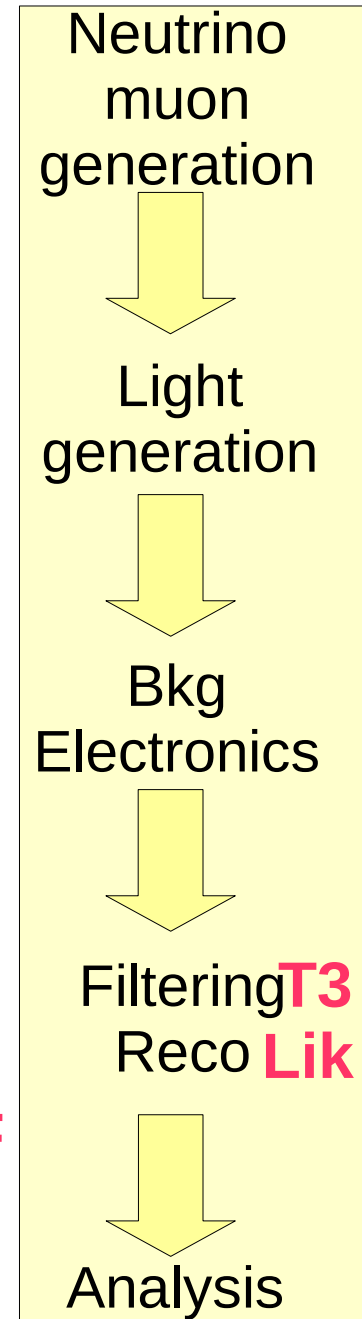


HOU
soft

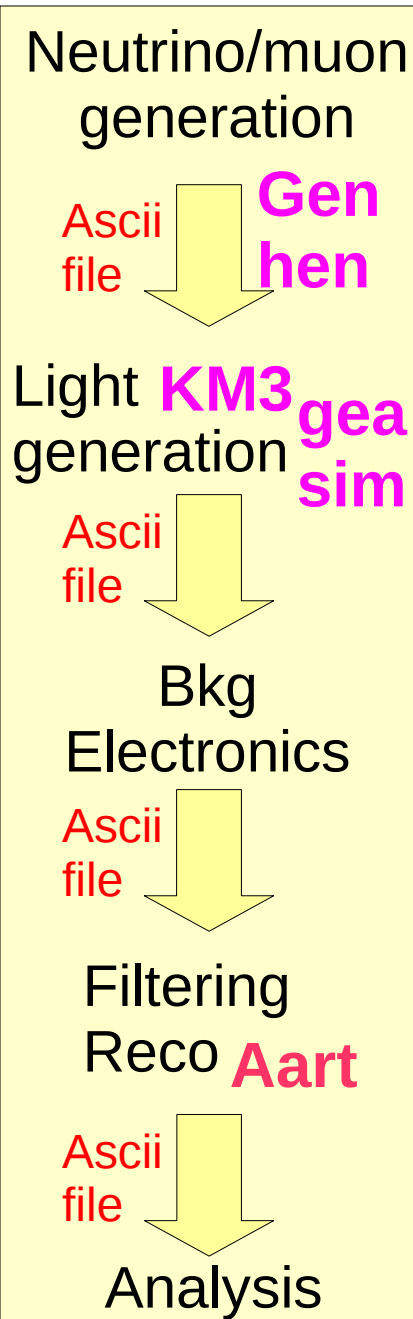


Mathematica

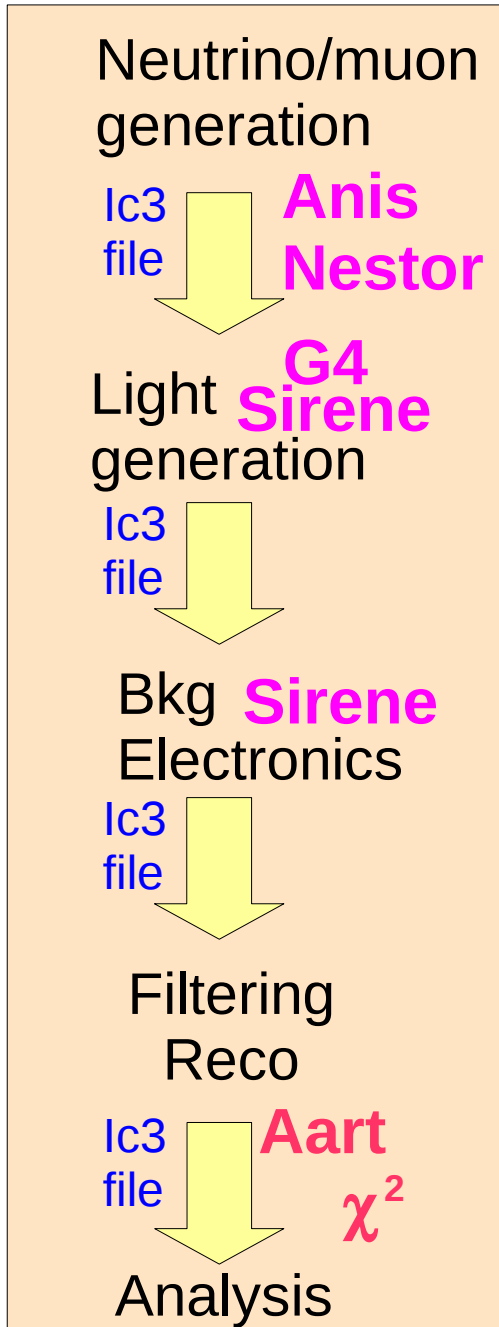
NESSY **FastTool**



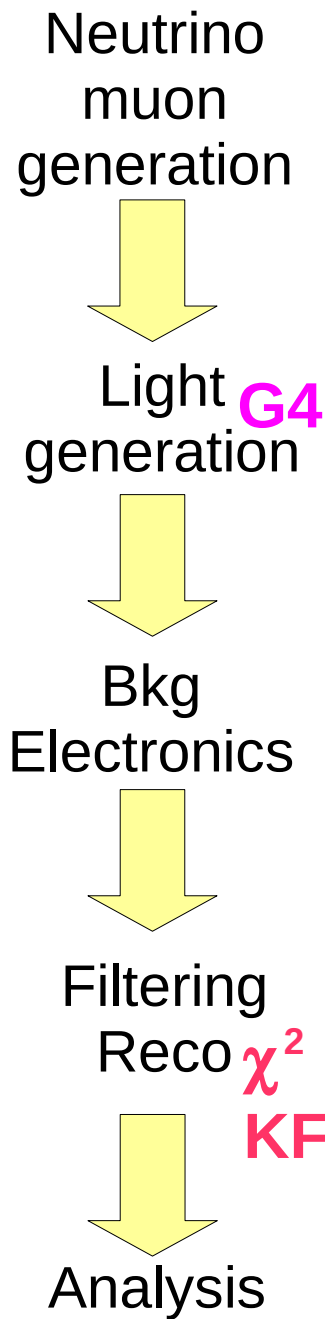
ANTARES
NEMO
soft



KM3TRAY
Chameleon



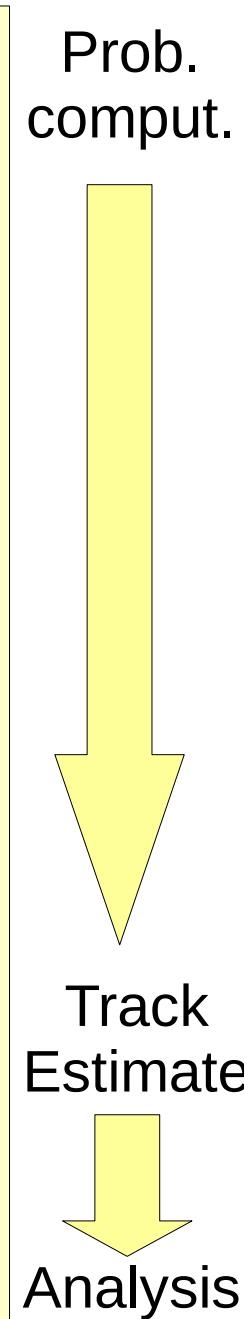
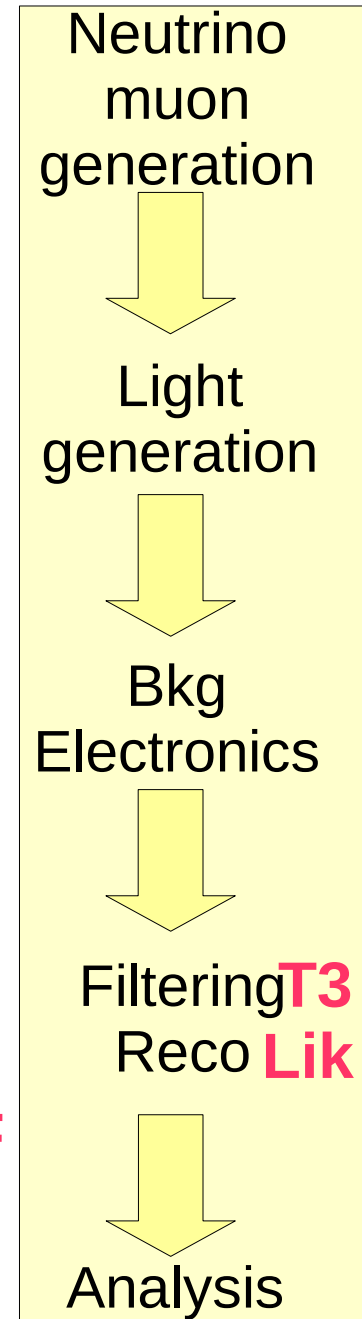
HOU
soft



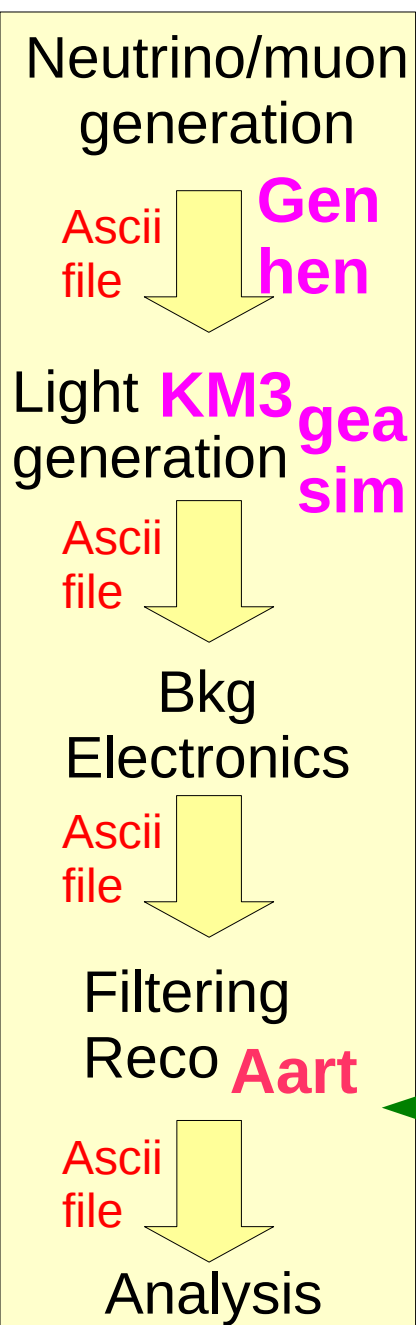
Mathematica

NESSY

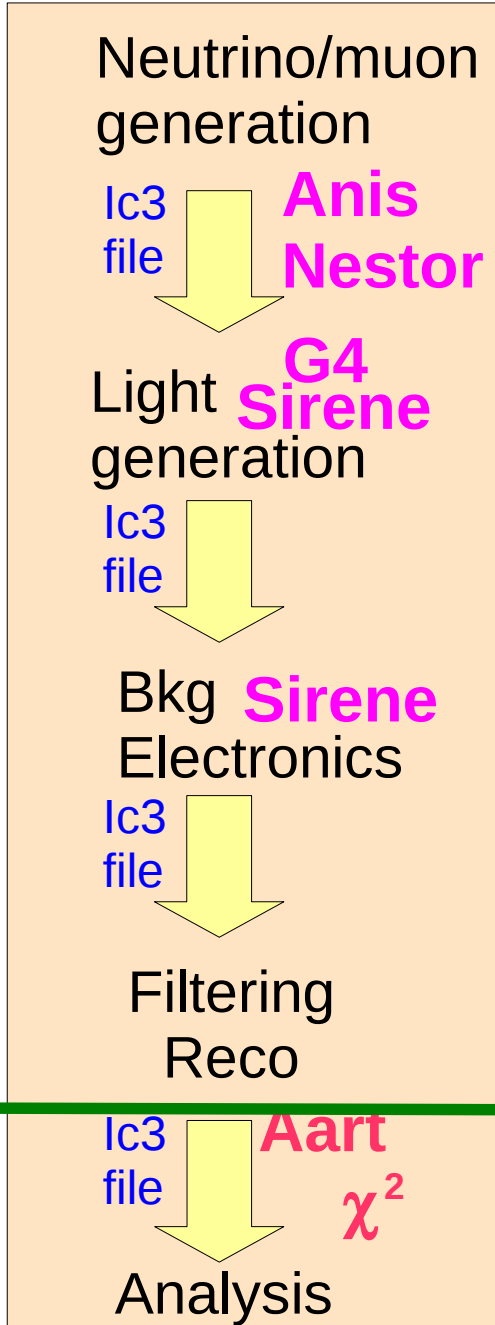
FastTool



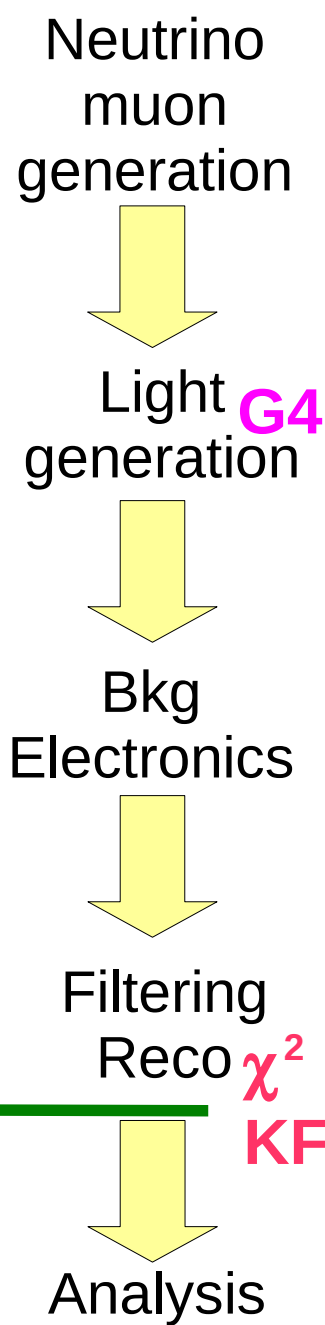
ANTARES
NEMO
soft



KM3TRAY
Chameleon



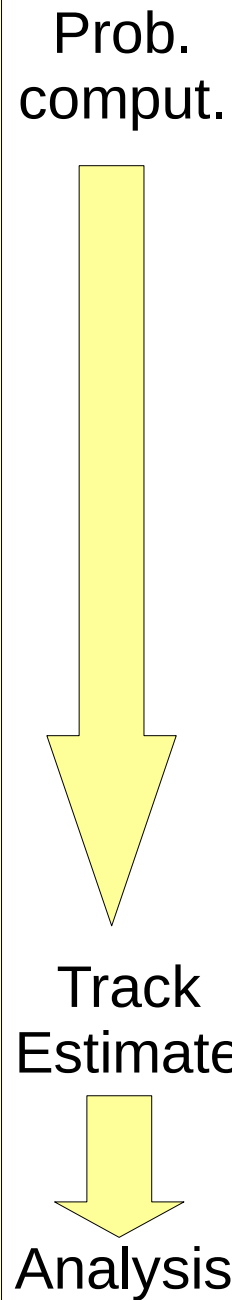
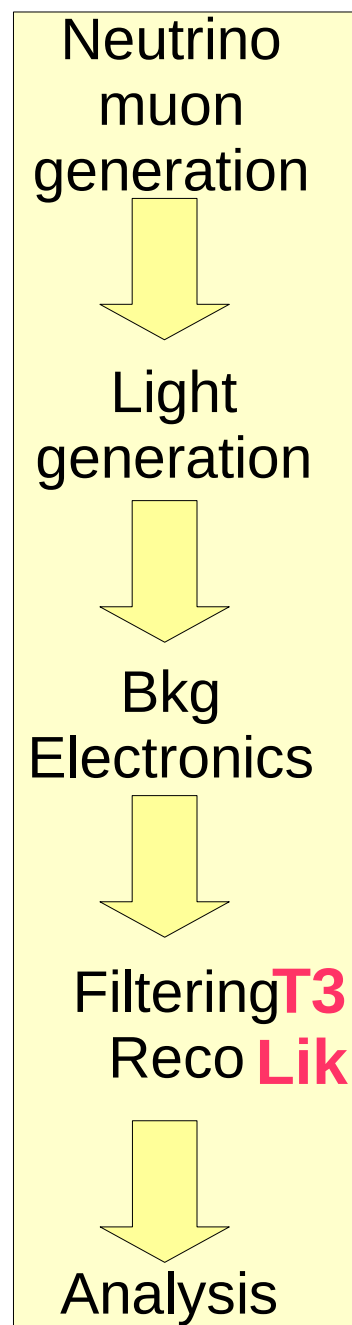
HOU
soft



Mathematica

NESSY

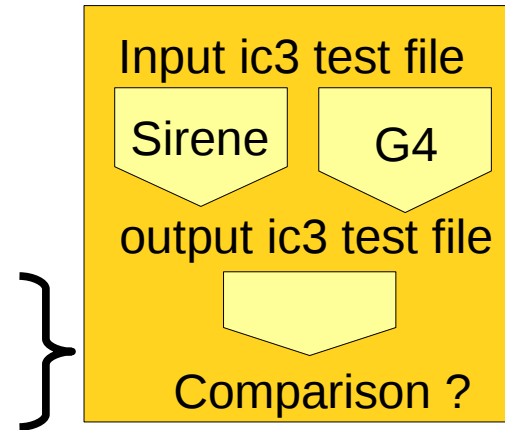
FastTool



Simulation :

Question :

A module of km3tray contains Sirene,
A module of km3tray contains GEANT4 (Claudio)



Smith and Baker water absorption still to be simulated : we will keep NEMO water as reference

Communication :

Each code (gen, sim, rec) has to read/write ascii files (tags; format already defined and easily usable) ?? : final conclusion : when data files are provided, they have to be associated to a clear documentation in order to be decoded by the receiver.

Repository for documentation

Detector files : will be as simple as possible for exchange between software frameworks : (PMT_NUMBER) x y z vx vy vz : coordinates of the photocathode center and of the vector indicating the orientation of the photocathode.

Reconstruction :

Work has to be continued to use different reconstructions and filtering.

Criteria to compare reconstructions : effective area has to be given with the corresponding sensitivity and atm muon contamination.

Optimization :

Fast tools useful to rapidly test simple variations.

Other tools to test more deeply the main possibilities, with muons

Energy estimator : in a first instance, possibility to use a degraded MCTruth ? : to avoid

Optimization/comparison criterion : Point source sensitivity plot vs declination for a given cost.

Smith and Baker water absorption still to be simulated : we will keep NEMO water as reference

Data exchange : final conclusion : when data files are provided, they have to be associated to a clear documentation in order to be decoded by the receiver.

Detector files : will be as simple as possible for exchange between software frameworks : (PMT_NUMBER) x y z vx vy vz : coordinates of the photocathode center and of the vector indicating the orientation of the photocathode.

Energy estimator : in a first instance, possibility to use a degraded MCTruth ? : to avoid
Optimization/comparison criterion : Point source sensitivity plot vs declination for a given cost.

“Not intuitive” results

Depth effect not so big for point sources ?

In case of tower: bar length no so important ?

PMT orientation not so important ?

Work to do

Better understanding of reconstruction effect & cuts : different, depending on the study.

Point sources have to be the main guideline.

Diffuse fluxes (and showers) are not a first priority

Energy estimator has to be developed now.

Distance between lines : important, but strongly constrained by deployment : 2 reference layout : 1 for each design (lines, towers)

Fix the level of relevancy of WP2 outputs, Cost Model

Point sources have to be the main guideline.

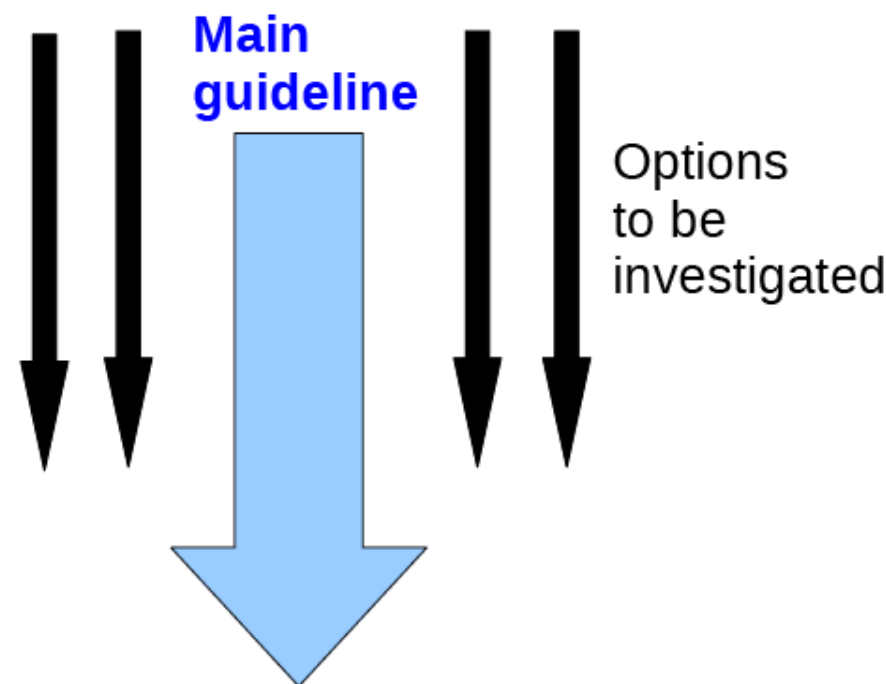
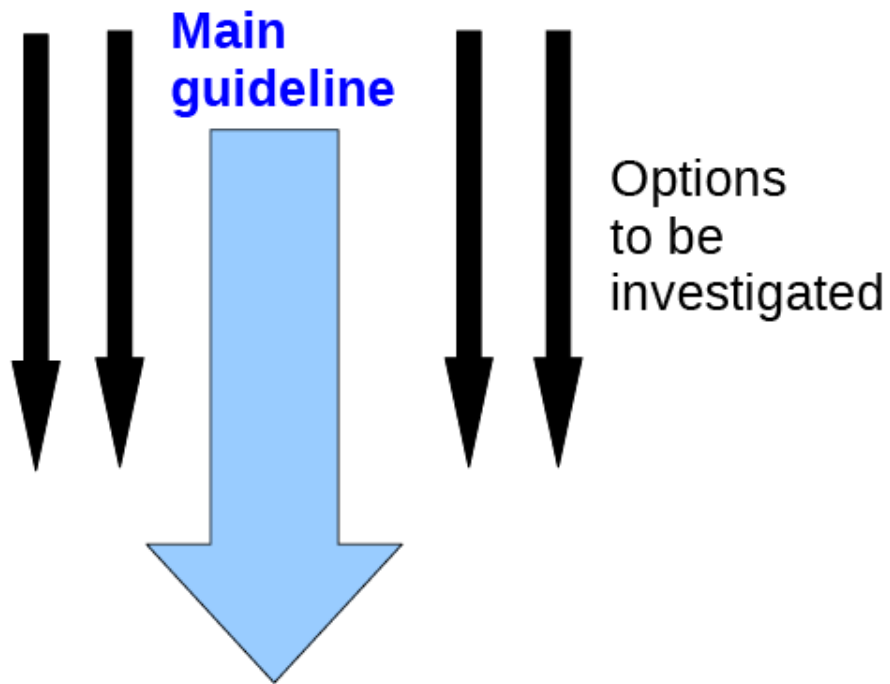
Diffuse fluxes (and showers) are not a first priority

Energy estimator has to be developed now.

2 reference layout : 1 for
each design (lines, towers)

STRING DESIGN

TOWER DESIGN

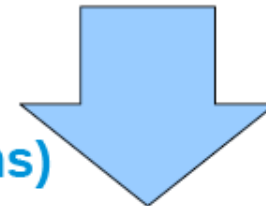
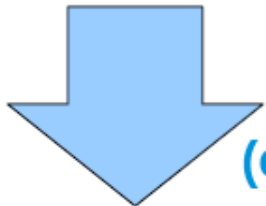


31 January 2009

Optimized
string
design

Optimized
tower
design

Further studies
(cross checks, more physics items)



Work sharing/Responsibilities

KM3Tray merged with
Nestor-Demokritos soft

ANTARES/NEMO soft

JP Ernenwein

C Markou

NESTOR/
Demokritos

Depth studies
(2500, 3500, 5000)

P Sapienza

Not a priority

Scattering Effect

R Coniglione

?

Improvements with
Energy Estimator

V Van Elewyck

NESTOR/
Demokritos

PMT orientation

C Di Stefano

Erlangen ?

Lateral extension of floors
and
distance between floors

B Baret

?

Sea Floor Layout

U Emanuele

?

⁴⁰K/Optical Background

JP Ernenwein

**Software chain responsables:
they ensure that newcomers
can use the software.**

**After each design optimization : will have to
ensure that the chain can, in some way, check
the other design**

Not a priority

Scattering Effect

R Coniglione

?

**2 Experts: one in each
chain;
they**

V Van Elewyck

NESTOR/
Demokritos

**ensure contact
between softwares
talking together**

C Di Stefano

Erlangen ?

they

B Baret

?

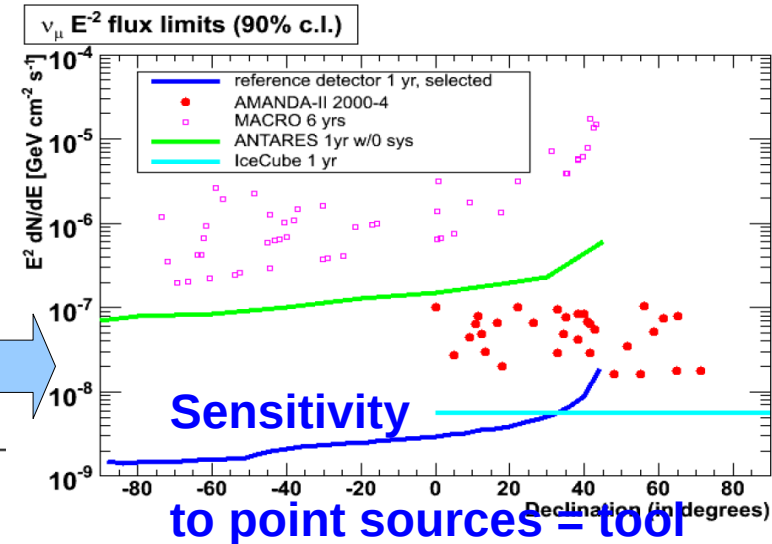
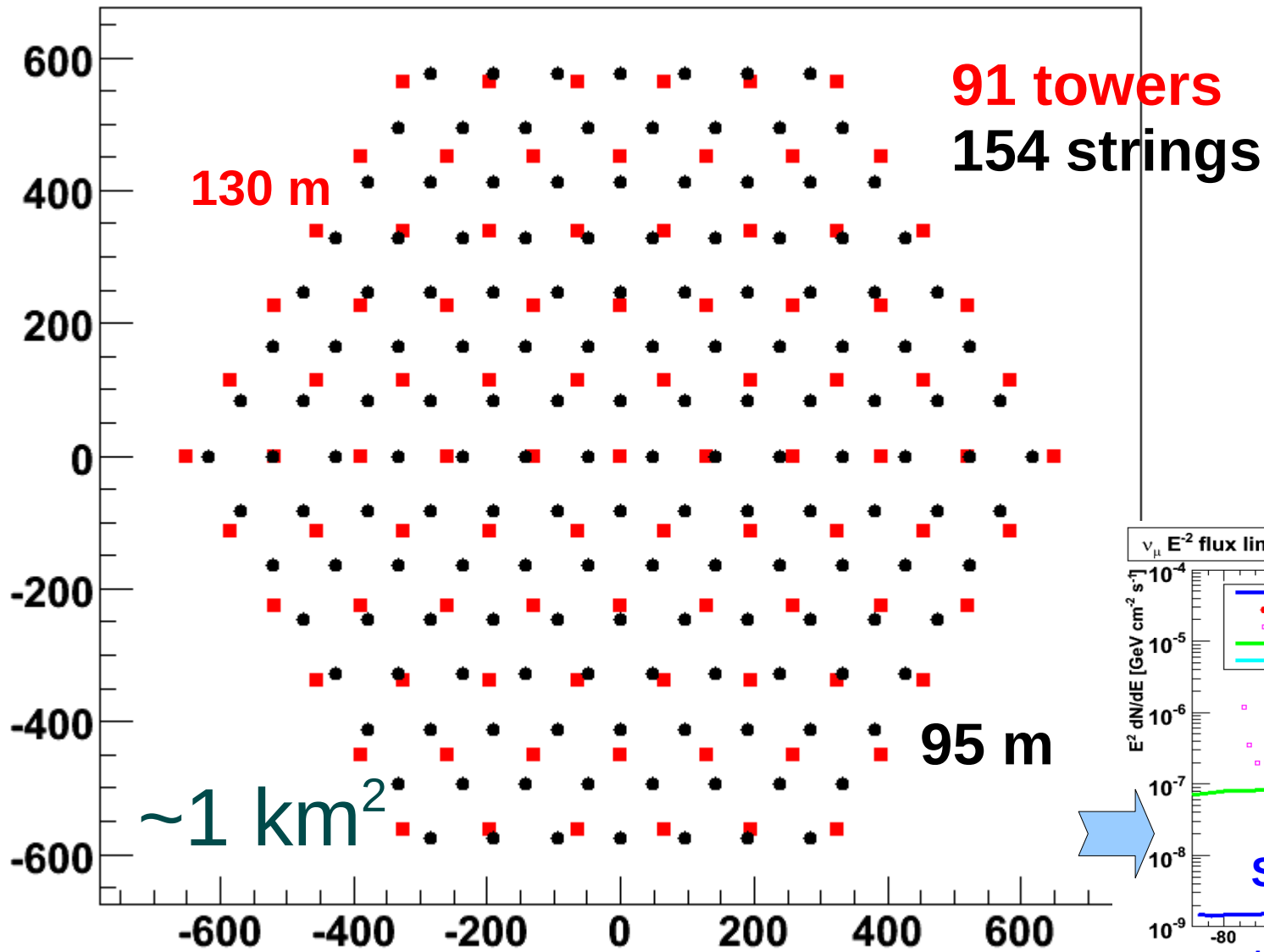
**ensure that a result
will be provided
by end of January**

U Emanuele

?

JP Ernenwein

LAYOUTS to be used for the optimization within each design (start points) :



Then, comparison criterion : sensitivity=f(€)

$\nu_\mu E^{-2}$ flux limits (90% c.l.)

Varying the size
(or other parameters) of the
optimized detectors

