



# The GRAND White Paper workshop

May 16 – 19, 2017

Institut d'Astrophysique de Paris

## White paper: steps to completion

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GRAND Workshop Paris      GRANDProto35      GRANDProto300      GRAND10k      GRAND200k



05/2017      10/2017      11/2017      12/2017      03/2018

How do we get to the preliminary white paper?

Preliminary white paper finished      Simulations finished      White paper improved      GRANDProto300 funding proposal submitted

Preliminary white paper circulated in China

In parallel: rally people in the US and elsewhere

# How do we finish the prelim. WP?

To finish the science-case sections, we need reasonable estimates or ranges for

- ▶ Angular resolution:  $0.1^\circ$ – $0.3^\circ$
- ▶ Shower energy resolution: 15%
- ▶ Energy threshold for shower detection:  $10^{17}$  eV (for  $\nu$ , CR,  $\gamma$ )
- ▶ Xmax resolution:  $30 \text{ g cm}^{-2}$
- ▶ Separation between antennas: 1 km
- ▶ FoV for neutrinos / CRs / photons:  $\pm 4^\circ$  ( $\nu$ ),  $70^\circ$ – $85^\circ$  (CR,  $\gamma$ )
- ▶ Frequency band(s): 60–200 MHz
- ▶ Neutrino flux sensitivity of GRAND10k:  $3 \cdot 10^{-9} \text{ GeV cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$
- ▶ Neutrino flux sensitivity of GRAND200k:  $1.5 \cdot 10^{-10} \text{ GeV cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$

**Right now:** take input from experimentalists

**Later:** we haggle

# Deadlines!

Finish the preliminary white paper asap

## ▶ Preliminary science case

- ▶ Individual topics: see Kumiko's presentation for names
- ▶ Science deliverables for GRANDProto35: Charles
- ▶ Science deliverables for GRANDProto300: Charles

▶ Prelim. design, simulations, recon.: Olivier, Charles, Anne

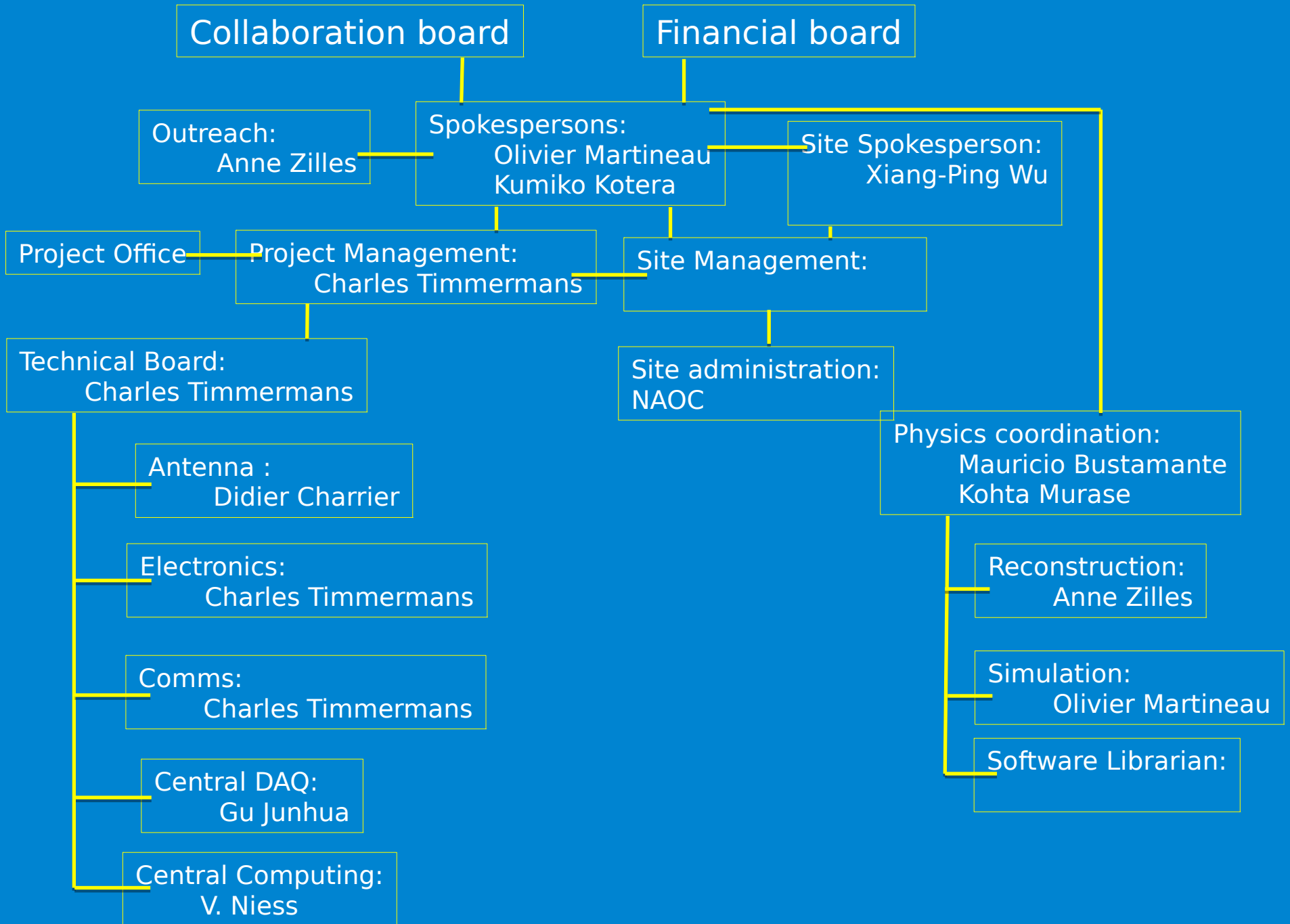
▶ Preliminary organizational structure: Charles

▶ Preliminary budget (not only hardware): Xiang-Ping

One common HARD deadline: 31/08/2017

White paper general coordinator/editor: Mauricio

# GRAND organizational structure



# Online resources

- ▶ **Workshop Indico:** Contains all slides (contact me)

[indico.in2p3.fr/event/14413](http://indico.in2p3.fr/event/14413)

- ▶ **GRAND wiki:**

[www.iap.fr/grand/mediawiki](http://www.iap.fr/grand/mediawiki)

- ▶ Will contain a cohesive description of goals and methods
  - ▶ Will contain official plots
  - ▶ Please send slides from past/future conferences
- ▶ **Shared folder:** Contains files for the white paper

# Getting exposure

GRAND will be in two major conferences in 2017:

▶ **ICRC:** 12-20 July, Korea → Ke+JunHua

▶ **TeVPA:** 7-11 Aug, US → Anne+Olivier+Mauricio

▶ **KIAA:** 17-19 Aug, China → Ke+Miguel+Olivier+Charles+Sijbrand

Need to get more exposure

– especially after the white paper is finished

Possibilities: TevPA 2018 (Berlin), ICRC 2019 (Madison),  
ARENA 2018

# Next steps & practical matters

- ▶ If you are contributing to the white paper, you will be granted access to the shared folder
- ▶ Write in LaTeX
- ▶ Use BibTeX
- ▶ **Follow the file structure already laid out** for the WP in the shared folder – individual sections in separate tex files
- ▶ Produce figures in **pdf**  
(if pdf is impractical, use high-resolution png)
- ▶ **Include references** – be as complete as possible, but do not attempt to give a literature review



Remember this date:

**August 31, 2017**

Deadline for submission of contributions  
to preliminary white paper

Contact me anytime: [bustamanteramirez.1@osu.edu](mailto:bustamanteramirez.1@osu.edu)

## Mid-term plan:

Dec 2017

Finish an improved version of the WP in  
the meeting in The Netherlands

Spring 2018

Meeting in China