

Minutes of Phone Meeting 1

Meeting of October 24, 2011

Next Meeting: November 7, 2011 at 9AM Pacific. If this time is inconvenient for you, please inform the conveners.

Please send additions and corrections to this brief summary to the entire mail list.

Present:

Ritz, Haas, Yavin, Boyce, Jaeckel, Holtrop, Toro, Niebuhr, Baker, Markowitz, Schuster, Essig, Jaros, Chou, Wang, Tanner, Bossi, Weltman, Echenard, Ringwald, Zioutas, Graham, Nelson, Maruyama, Stepanyan, Afanasev, Steffen, Buckley, Wester, Zioutas, Siemko, van Bibber

Transparencies shown can be found here: <https://twindico.hep.anl.gov/indico/categoryDisplay.py?categId=34>

1. Introduction

Rouven presented a general introduction to the Intensity Frontier Workshop and the Hidden Sector Photon and Axion Working Group. See slides above. Karl noted that there would be a meeting next April discussing the Axion Roadmap. He wondered if axions really belonged in this workshop, since little activity was centered at Fermilab. He was assured that the IFW was about the entire intensity frontier, not just that at Fermilab, and that it was explicitly not just about accelerator experiments. Axions certainly belong on the "photon intensity frontier" and will be included in our group. Keith noted that there are a wide range of new axion experiments, and wondered if they should be included in our working group. The convenors would like to be made aware of other experiments and experimenters, and ideally presented with a "data sheet" on each. We should try to cover the whole field, but may have to make choices later about what subjects to concentrate on at IFW.

Joerg suggested we try to focus on particularly interesting mass ranges, guided by theory and other physics motivations. We should certainly survey all scientific motivations and guidance that we can, but may not need to restrict the mass reach of experiments.

Several complained that our name was too restrictive, and asked if other WISPs, like chameleons, would be covered. The convenors will give some thought to another name change (too many name changes may not be wise), but certainly don't intend to exclude other WISPs. The surviving theme is sensitivity to new light particles weakly coupled to ordinary matter.

2. HSPA Experiment survey.

John presented a few slides to encourage the group to formulate a complete list of ongoing and newly proposed HSPA experiments. See slides above. He also reviewed the "fact sheet".

To all: please see that the convenors get a fact sheet representing your experiment, and other HSPA experiments that you know of. The fact sheet format is given at the website above and on the confluence webpage. If you can present it in latex, all the better. See <https://confluence.slac.stanford.edu/display/hspawg>

The list presented will have BRFT and Carrack removed, a new Fermilab Resonant Regeneration experiment included, new microwave cavity experiments included, the crystalline DM experiment added, several space experiments included, and OSQAR as well.

Comments to these Meetings that were sent to everybody

from Joerg Jaeckel:

Dear Rouven and everybody else,

first of all thank you very much for the effort in putting together this working group.

One small comment. I think during the meeting I didn't express myself very clearly with what I meant with identifying interesting regions. What I wanted to say is the following:

I think that we should make it clear that in addition to going on a tour of exploration (which I think is a great thing to do and perhaps even my favorite type of experiment; for this reason I don't want to restrict experiments to certain mass ranges)

- we have precise physics goals and hopes of finding new physics in certain regions, motivated by theory as well as experimental/observational hints for new physics.

- this could perhaps be linked to answering fundamental questions about dark matter, dark energy and possibly the existence of extra space dimensions.

Showing that proposed/ongoing experiments can probe areas interesting to these hints and questions should, I think, significantly strengthen our case.

In a pictorial way I am wondering if we could produce something like an upgraded and more generalized combination of the two attached figures (sorry for being biased towards figures from my publications but those I have right at hand; by the way thanks for using one of those figures on the working group web page :-).).

Best wishes
Joerg

P.S. Following Andrea's suggestion, maybe one more inclusive name for a name for the working group could be "Axion, hidden sector photon and WISP working group".

In this way we make use of that many people recognise axions and hidden photons but also include all other types of WISPs.