

---

# Cracow Node – status

Z. Was,  
Institute of Nuclear Physics IFJ-PAN

---

# Plan of presentation:

- People
- Hiring
- Administrative tasks and turbulences.
- Scientific work Cracow
- Scientific work Warsaw

# People:

- **Cracow:** E. Richter-Was, S. Jadach, M. Skrzypek, T. Przedzinski, J. Piatlicki, O. Shekhovtsova, **Z. Was**
- **Warsaw:** J. Kalinowski, W. Kotlarski, A. Kalinowski, M. Bluj
- **Katowice:** K. Kolodziej

# Hiring:

- Advertisement is on our Institute web page.
- Most promising candidates will appear June.
- Competition with software industry. They hire **very early and very young undergraduate students**.
- We extend search basis: **Cracow ATLAS, Warsaw CMS** --> If only candidates can contribute to our topics. Personal contacts in particular with Kharkov, Novosibirsk, Hangzhou univ.
- We can safely extend list of languages ...

---

## Administrative tasks and turbulences

- It seems that all technical/administrative aspects of project are under control.
- Potential difficulties/uncertainties for hiring.
- Limitations/ constraints for candidates from Russia, Ukraine, Belarus. I have lost reasonable candidate because of 3 month too long residency in Poland. Even though he was actually working for German company.
- Unclear conditions.
- Need advice.

---

# Scientific work Cracow and Katowice:

- Main topic: simulation of tau leptons
  - Decays: BaBar initialization, RChL
  - Production: TauSpinner, New physics signature
  - Reconstruction of leptons, precision single boson observables like  $\phi^*$
- At present collaboration with :
  - Warsaw, Katowice SM & New Physics Matrix elements
  - Aachen CMS, Bonn ATLAS, use of tau leptons in experiments
- Studies for systematic errors. Partners?
- Work details will be set by interest of hired students.

## Scientific work Warsaw and perspectives for publications.

- Matrix elements for processes involving Higgs and/or pair of Z/W bosons, calculated from SM and Ext. for SM. The WW induced processes.
- Phenomenology of tau leptons in CMS.
- Direction to be set by interest of hired students
- **PUBLICATIONS (plans):**
  - Our paper on TauSpinner <http://arxiv.org/abs/1402.2068> appeared bit too early to be quoted. But work is continued.
  - Warsaw plan to update Phys.Rev. D86 (2012) 036011 on WW scattering in near future.
  - Clear directions and tasks for further work and for development of tools useful for experiments.

---

## Summary:

- Scientific plans clear.
- Perspectives for hiring not clear (as expected).
- Two/three candidates graduating from PL institutions, consider PhD studies on other nodes of the network.