Agenda item 6:
Swiss Centre for Advanced Studies
Status Report and Alternative Way Forwards

Planned for this Board meeting: final discussion and approval of the request in view of its submission to the SUK at end August
BUT:

- Sketch proposal **NOT** supported at CRUS (beginning July) because "... the network is considered being sufficiently efficient and does not need further funding."
- EB's idea to continue the work and to submit the project to SUK without recommendation by CRUS strongly discouraged by Vice-Rector Wyler (ZH) and Rector Vassalli (GE).
- Rector Vassalli (GE) sees reasonable chances for an NCCR (call open right now), encourages CHIPP to proceed to an NCCR proposal sketch.

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Swiss Centre for Advanced Studies
NCCR Particle Universe (1)

Sketch NCCR “Particle Universe” (distributed) :

•Includes accelerator-based, non-accelerator-based particle physics and particle theory, all pillars from the RoadMap

•Implements transversal structures between main directions of research efforts as per RoadMap & Implementation document

•Exploits the synergies in terms of experimental techniques, analysis methods, and cross-fertilization between theory and experiment

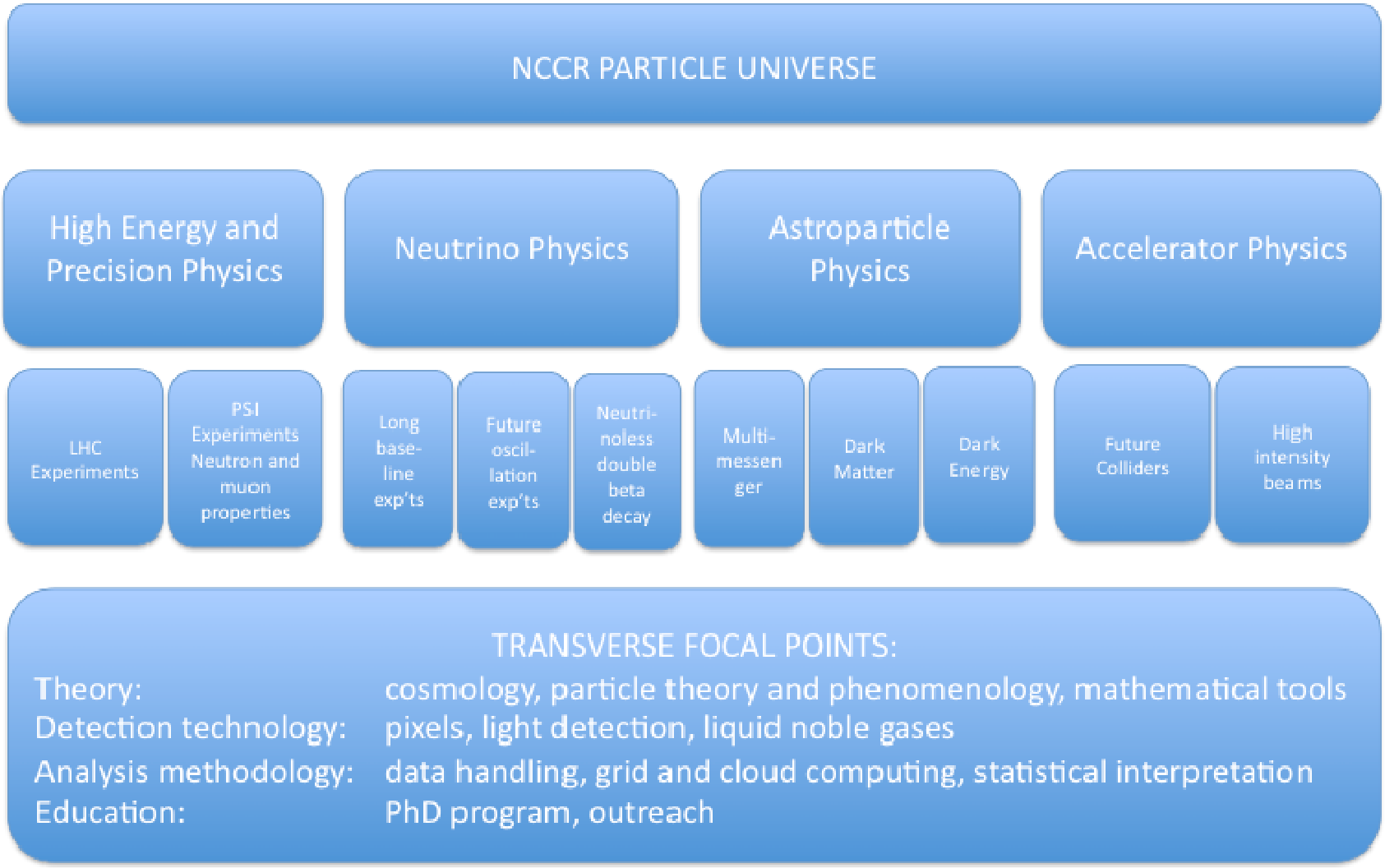
•Aims at ensuring sustainability of long-term projects in the field and at increasing the competitive edge of Switzerland in globalized competition.

•Enables us to do experiments that could otherwise not be done.
Example: μ➔3e requiring more intense beams and new detectors.

Swiss Institute of Particle Physics

NCCR Structure

NCCR Particle Universe (2)



Swiss Institute of Particle Physics

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NCCR Particle Universe (3)

Some elements of the NCCR Particle Universe:

- Increased collaboration & information exchange between theory and experiments to shorten time-lag between major progress in one and awareness in the other field
- Common efforts for development of detector technologies to optimize performance and affordability
- Proper exploitation of existing and new computing facilities and ensure their integration in the European context
- Good standard of undergraduate education in PP
- Coordinate and streamline doctoral programmes in PP
- Improve communication with general public and in particular the young generation

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NCCR Particle Universe (4)

NCCR goals:

- Coordinate and support the Swiss return of investment from LHC experiments, neutrino and astroparticle physics experiments by creating PhD student and post-doctoral fellowships, closely networked and embedded in a Swiss-wide doctoral and post-doctoral research and education program.
- Coordinate and support upgrade projects for the LHC experiments ATLAS, CMS and LHCb, to help the detectors cope with the ultimate LHC performance and maximize the physics output for the Swiss participants and the experimental communities at large.
- Increase the Swiss impact in the planning process for future accelerator facilities, focusing on CERN projects beyond the present LHC.

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NCCR Particle Universe (5)

NCCR goals cont'd:

- Coordinate and support the Swiss contribution to the construction, commissioning and analysis of long base line v oscillation exp'ts.
- Help with the planning and construction of future large-scale neutrino observatories and the corresponding powerful beams.
- Coordinate and support the efforts to experimentally assess the nature of neutrinos through the currently planned and future large-scale facilities to search for neutrino-less double beta decay.
- Intensify the Swiss participation in experiments seeking to identify the particle content of Dark Matter, using both direct and indirect detection methods.
- Implement a cooperative multi-messenger approach to high-energy astrophysics between Swiss groups to identify the nature of astrophysical particle sources and accelerators.

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NCCR Particle Universe (6)

A lot of work ahead of us:

- Define a coherent and full Research Program for the period 2014-2017
- Demonstrate the added value of a NCCR
- Establish Research Plans for the individual projects
- Identify actions for knowledge and technology transfer, advancement of young scientists and women, and communication
- Set up the structure of the NCCR and identify the leading house and the partners
- Establish a budget for 2014-2017

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NCCR Particle Universe (7)

Schedule:

•Deadline for submission of the sketch at SNF:

16 January 2012

BUT:

•Deadline for submission at each of the participating universities:

31 October 2011

At SNF:

•Formal check

•Scientific evaluation by at least two international experts

•Scientific evaluation by an interdisciplinary committee

(8 top shots from abroad)

•Structural evaluation by Forschungsrat Abteilung IV SNF

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NCCR Particle Universe (8)

Discussion in the Board: NCCR: yes or no?

•If YES:

- define content, establish research programmes and individual projects, budget, etc. (your contributions!): until 19 September
- first draft available/distributed to the Board: 23 September
- feedback until 3 October
- second draft available/distributed: 7 October
- final feedback until 17 October
- final version with the help of communication experts: end October

•If NO: how shall we keep the momentum and thrust, what is the fate of CHIPP?