

**FOLIS** (= **F**onds for the Swiss Participation in the construction and operation of international **L**arge research facilities and **I**nfra**S**tructure)

**Executive summary**

Swiss groups in particle physics are involved in many of the important fields of fundamental particle physics research: Higgs search, neutrino physics, proton decay, dark matter and dark energy, CP violation. In most fields there is a significant Swiss intellectual contribution, demonstrating that science is in the driver's seat. A large part of these contributions are channelled into CERN and CERN projects, where Switzerland is a founding member (1954).

More and more of the new projects are organised outside of CERN (and ESO) and need large research infrastructures and a lot of resources for construction and operation, predictably distributed over many years. Such undertakings can be carried out successfully only in the framework of large international collaborations and for projects which are politically accepted through their inscription in European (such as ESRFI) and national roadmaps.

The Swiss particle physics community is well organised in CHIPP and benefits from the discussions and interaction therein. For instance, a recent CHIPP inquiry has shown several planned Swiss participations in large research infrastructure projects; the Swiss contribution in all these projects is compatible with the size and expertise of the research groups concerned.

- CTA (Gamma Ray astrophysics): Geneva, Zurich, EPFL, ETHZ
- DARWIN (Dark Matter): Zurich, ETHZ
- GERDA (Double Beta decay): Zurich
- GLACIER (proton decay, neutrino astrophysics): Berne, Zurich, ETHZ
- PEBS (cosmic positron spectra): EPFL, ETHZ.

More projects will be identified as time goes by (e.g. XENON-1t [Zurich]). All these participations and contributions fit well into the CHIPP Roadmap.

If the Swiss research community wants to stay at the forefront of research, active and strong participations in new projects are needed. If Swiss science policy wants Swiss researchers to maintain and strengthen their competitive position, it must support and adequately fund such participations. Whereas no support can be expected from SNF for construction and operation of large infrastructures and research facilities, grants are approved for scientific work with and in such large undertakings.

Therefore, CHIPP developed the idea of a new funding line (working name FOLIS (= **F**onds for the Swiss Participation in the construction and operation of international **L**arge research facilities and **I**nfra**S**tructure) to be inserted in the next research bill to Parliament. It should cover the Swiss participations in the construction and operation of international large research facilities and infrastructures. Its structure, rules and size shall be similar to FORCE and FINES. This means that investments and operations costs are covered and a FOLIS request must be associated with a regular SNF grant request. Eligible are only international projects – independent of their location – with established collaborations being part of ESRFI or other international roadmaps. The community would be best served with this new funding line being available for the next funding periods 2012 and 2013-2016.

The funding expectations from the research community of approximately 9 MCHF per annum are probably unrealistic. A politically more acceptable range should probably be of the same order of magnitude as FORCE (4.8 MCHF).

The State Secretary for Education and Research understands the idea and the necessity of such an instrument to maintain Swiss competitiveness; its services are trying to find ways and means to insert FOLIS into the next funding bill respecting guidelines set by the Federal Council regarding the federal spending for research in the period 2012-2016.