

# MEMORANDUM OF UNDERSTANDING

## The BGO-OD Collaboration at ELSA

08/03/2010

### Preamble

This Memorandum-of-Understanding constitutes the formal agreement of the signers upon the foundation and any further extension of the BGO-OD collaboration at the electron accelerator ELSA of the University of Bonn's Physikalisches Institut.

The aim of the collaboration is to investigate the subnuclear structure of matter through the measurement of photo-nuclear processes using the electron beam and/or secondary photon beams of the ELSA accelerator.

Basic components of the detection system are

- the BGO *Rugby Ball* calorimeter
- the *Open Dipole* forward spectrometer.

This memorandum of understanding (MOU) specifies:

- the experimental setup
- the participating institutions and the collaborating members
- the rights and the obligations of the members
- the collaboration management
- the publication and presentation policy

of the BGO-OD collaboration. This agreement ends in January 2017 if not formally extended before.

### 1. Experimental setup

The experimental setup consists of the two main components to generate polarized and unpolarized photon beams, and to detect the hadronic reaction products.

(a) Photon beams are generated by bremsstrahlung. The tagging system encompasses the photon tagger with radiator positioning system, tagging dipole and electron detector, and the beam intensity monitors.

(b) The detector system consists of central and forward parts. The central part (for polar angles between  $25^\circ$  and  $155^\circ$ ) is based on the BGO *Rugby Ball* calorimeter and its associated detectors (scintillator *Barrel* and *CWC*

cylindrical wire chambers) surrounding the target. The forward spectrometer is based on the *Open Dipole* magnet equipped with tracking devices (*SciFi* scintillating fiber detectors and *DC* drift chambers), and particle identification devices (aerogel Cherenkov detector and *Time-of-Flight* wall). It is intended to complement the forward tracking by additional Si micro-strip detectors.

## 2. Participating institutions (2010)

- University of Bonn, Germany, Physikalisches Institut, ELSA department, represented by Friedrich Klein and Hartmut Schmieden,
- University of Bonn, Germany, Helmholtz Institut für Strahlen- und Kernphysik, represented by Reinhard Beck and Kai-Thomas Brinkmann,
- INFN-LNF Frascati, Istituto Superiore di Sanità and INFN Roma1, Rome, Italy, represented by Paolo Levi Sandri,
- University of Pavia, INFN Pavia, University of Torino and INFN Torino, Italy, represented by Alessandro Braghieri,
- University of Roma “Tor Vergata” and INFN Roma “Tor Vergata”, Italy, represented by Rachele Di Salvo,
- University of Messina and INFN Catania, Italy, represented by Giorgio Giardina
- University of Edinburgh, UK, represented by Daniel Watts,
- Institute of High Energy and Nuclear Physics of National Scientific Center “Kharkov Institution of of Physics and Technology“, Kharkov, Ukraine, represented by Vladimir Ganenko,
- Institute for Nuclear Research of the Russian Academy of Sciences, Moscow, Russia, represented by Vladimir Nedorezov,
- Petersburg Nuclear Physics Institute (PNPI), Gatchina, Russia, represented by Victorin Sumachev.
- University of Basel, department of Physics, Switzerland, represented by Bernd Krusche

## 3. Rights and obligations of collaboration members

All groups and all group members must take over responsibility for the success of the project. They contribute to the construction, maintenance and possible future upgrade of the detector system, to the preparation of proposals and projects, and to the data taking and data analysis.

The members of the collaboration shall supply, commission and maintain the experimental equipment including the related electronics, computers, software and any other required infrastructure at the experimental site. The

components must be kept fully operational for the duration of the experimental program and namely January 2017 at the least. In case any institution leaves the collaboration, its equipment must remain available for the experiments, although the property shall stay within said providing institution. In general, propriety rights are not touched by assigned responsibilities within the BGO-OD collaboration.

It is in the responsibility of each participating group to ensure that all individuals of the group respect the radiation safety regulations at ELSA.

The distribution of responsibilities is detailed in an extra appendix to this memorandum of understanding.

Each member of the BGO-OD collaboration has the right to submit proposals for new experiments or new analysis methods to the Collaboration Management. Those must be discussed at the next possible collaboration meeting.

Each member of the BGO-OD collaboration has the right to access and to analyze the experimental data. However, publications and any public presentations of previously unpublished material require the prior release by the collaboration according to the policy outlined further below.

#### **4. Collaboration management**

The collaboration is managed by a *Steering Committee (SC)* formed by the group leaders from each participating institute, the technical head of the ELSA accelerator, and the technical head of the experimental area. Upon the suggestion of one of the group leaders and on the discretion of the SC, further experts may become consultative members without vote. The SC elects two spokespersons with the mandate to represent and coordinate the collaboration. The regular term of office is two years, re-election is permitted. In addition, the SC elects the *Technical Coordinator* who will coordinate the technical day-to-day business of the collaboration. In the interim and until the SC is established, the acting spokespersons are Paolo Levi Sandri (INFN) and Hartmut Schmieden (Bonn PI). If not already

member of the SC, the Technical Coordinator becomes a non-voting member of the SC.

The SC will take all important decisions within the collaboration, such as general and scientific policies, new members, results presentation at conferences and workshops, and their publication. The SC may delegate specific responsibilities to various subgroups.

The SC will meet at least annually, alternately chaired by the two spokespersons. It is the responsibility of the spokespersons to organize regular collaboration meetings, at least one per year.

## **5. Membership of the BGO-OD collaboration**

The SC will decide on the application of any institution or any individual requesting membership of the collaboration. At least two members of the SC will need to make a strong recommendation for the applicant. Each new member is expected to actively participate in the experiment according to section 3. The spokespersons and technical coordinator will explore and negotiate the potential contributions of applicants prior to and as a basis for the acceptance decision by the SC. The group leaders sign the memorandum of understanding.

Each institution already participating in the collaboration informs the spokespersons about new members, and should introduce new members at the collaboration meetings. Membership of an individual usually ends one year after if he/she leaves his/her home institution, if not decided otherwise by the SC. Membership of an individual can be terminated by the qualified majority of the SC described in paragraph 7.

## **6. Publication and presentation policy**

The SC will decide about the authors' list of any BGO-OD publication. All publications and authorships must respect the regulations of the German Science Foundation (*Deutsche Forschungsgemeinschaft DFG*) regarding "Good Scientific Practice". In particular, to appear as an author, a substantial amount of work and responsibility for any experimental or analysis component must be provided, and each institution must support data taking appropriately. The authors' list will be in alphabetical order and styled as follows: J. Aasomeone et al. (The BGO-OD Collaboration).

Alternatively, if a paper is mainly based on an individual analysis or hardware contribution, eg. within a PhD or master/diploma thesis, then upon decision of the SC the main author may be placed in front of the alphabetical collaboration list.

One (or two) corresponding author(s) will be assigned for each publication.

Prior to submission, each paper has to undergo an internal reviewing process. For this, two internal referees are assigned by the spokespersons.

Papers on specific technical developments may appear with a restricted authors' list with the agreement of the SC.

Details of the experimental set-up, preliminary data and other results of the BGO-OD Collaboration may be presented at workshops and conferences. All unpublished material shown must be released by the SC. The SC may authorize groups to present collaboration material in their own responsibility. All talks given on behalf of the BGO-OD Collaboration must be notified to the spokespersons.

## **7. Decisions and majorities in the Steering Committee**

The Steering Committee has a quorum, if at least 50% of all members are present. Usually, decisions require one vote over the 50% majority of the attendant SC members who are entitled to vote. A qualified majority requires one vote over the 75% majority of the attendant SC members who are entitled to vote, at least 50% of all voting SC members.

A group leader who is unable to attend a SC meeting may delegate his/her vote to a representative.

## **8. Modifications of the Memorandum of Understanding**

To modify the regulations of this memorandum of understanding the qualified majority of the SC is required on a meeting of the SC. The discussion of the modification and the ballot must be announced at least two weeks in advance.

## **9. Signatures**

On March 8, 2010, this memorandum-of-understanding is agreed by

Prof. Dr. Friedrich Klein

Prof. Dr. Hartmut Schmieden

Prof. Dr. Reinhard Beck

Prof. Dr. Kai-Th. Brinkmann

Dr. Paolo Levi Sandri

Dr. Alessandro Braghieri

Dr. Rachele Di Salvo

Prof. Dr. Giorgio Giardina

Prof. Dr. Daniel Watts

Prof. Dr. Vladimir Ganenko

Prof. Dr. Vladimir Nedorezov

Prof. Dr. Victorin Sumachev

Prof. Dr. Bernd Krusche