#### **PUBLICATIONs:**

RICH prototype paper accepted for publications in EPJA

### Compliments and thanks to everybody!! But expecially M. Mirazita

**EPJ manuscript No.** (will be inserted by the editor)

# Test of the CLAS12 RICH large scale prototype in the direct proximity focusing configuration

S. Anefalos Pereira<sup>3</sup>, N. Baltzell<sup>1</sup>, L. Barion<sup>4</sup>, F. Benmokhtar<sup>2</sup>, W. Brooks<sup>11</sup>, E. Cisbani<sup>6</sup>, M. Contalbrigo<sup>4</sup>, A. El Alaoui<sup>1a</sup>, K. Hafidi<sup>1</sup>, M. Hoek<sup>10b</sup>, V. Kubarovsky<sup>8</sup>, L. Lagamba<sup>7</sup>, V. Lucherini<sup>3</sup>, R. Malaguti<sup>4</sup>, M. Mirazita<sup>3c</sup>, R.A. Montgomery<sup>3,10</sup>, A. Movsisyan<sup>4</sup>, P. Musico<sup>5</sup>, A. Orlandi<sup>3</sup>, D. Orecchini<sup>3</sup>, L.L. Pappalardo<sup>4</sup>, R. Perrino<sup>7</sup>, J. Phillips<sup>10</sup>, S. Pisano<sup>3</sup>, P. Rossi<sup>3,8</sup>, S. Squerzanti<sup>4</sup>, S. Tomassini<sup>3</sup>, M. Turisini<sup>4,11</sup>, and A. Viticchiè<sup>3</sup>

- <sup>1</sup> Argonne National Laboratory, Physics Division, 9700 S. Cass Ave, Argonne IL, 60439, USA
- <sup>2</sup> Duquesne University, Department of Physics, 317 Fisher Hall, Pittsburgh, PA 15282, USA
- <sup>3</sup> INFN Laboratori Nazionali di Frascati, Via Enrico Fermi 40, 00044 Frascati, Italy
- <sup>4</sup> INFN Sezione di Ferrara, Polo Scientifico e Tecnologico. Edificio C. Via Saragat 1, I-44122 Ferrara, Italy
- <sup>5</sup> INFN Sezione Genova, Via Dodecaneso 33, 16146, Genova, Italy
- <sup>6</sup> INFN Sezione di Roma, gruppo Sanità and Istituto Superiore di Sanità, I-00161 Rome, Italy
- <sup>7</sup> INFN Sezione di Bari, Via E. Orabona n.4, I-70124 Bari, Italy
- <sup>8</sup> Jefferson Laboratory, Thomas Jefferson National Accelerator Facility, 12000 Jefferson Avenue, Newport News, VA 23606, USA
- <sup>9</sup> Università degli Studi di Ferrara, Via Saragat 1, I-44122 Ferrara, Italy
- <sup>10</sup> University of Glasgow School of Physics and Astronomy, Kelvin Building, University Avenue, Glasgow G12 8QQ, Scotland, UK
- <sup>11</sup> Universidad Tecnica Federico Santa Maria, Valparaiso, Chile

#### **REVIEWs:**

RICH Mid-term review in October 13

Final report soon available on the wiki page Recommandations on: Aerogel flatness Updated Management Plan Installation and Safety

### Technical, Cost, and Schedule Review of the CLAS12 RICH

On October 13, 2015 a technical, cost, and schedule midterm review was held of the CLAS12 RICH detector project. The review panel, convened by Rolf Ent, included Thomas K. Hemmick (chair), Clara Matteuzzi, David Abbott, Curtis A. Meyer, Javier Gomez, Bob Miller, and Allison Lung. Formal presentations were given by P. Rossi (Overview, Management Plan), A. Kim (PMT), M. Contalbrigo (Aerogel), M. Turisini (Electronics), D. Orecchini (Mechanics), M. Mirazita (Mirrors), S. Tomassini (Installation & Integration), and S. Pisano (Software). E. Bartosz sat in as DOE observer.

### **AEROGEL:**

Visit in Novosibirsk 14-18 December 2015 (P. Rossi, M. Mirazita, M. Contalbrigo)

Surface planary  $\Delta S_{surf}$  < 2 mm (old 1.5 mm) to achieve wanted production efficiency as recommendend by Mid-term Review Committee

Plan: complete first forniture within 31<sup>st</sup> March 2016 (from the 2015 production batches)

get new order in January 2015 to avoid any break in production

complete the aerogel forniture before June 2017 to allow RICH installation in summer



#### **MECHANICS:**

RICH module: design finalized, CFRP everywhere except the attaching flanges production ongoing

Entrance and electronics panel: contract awarded (Tecnavan)

Exit panel: design ready

Assembling structure: almost completed



#### **MIRRORs:**

Planar mirror: production started, first mirror fulfill specifications

Spherical Mirror: production ongoing, first 2 mirrors expected before March

Coated demonstrator fulfill specifications

Test ongoing on mounting and alignment tools





#### **MA-PMTs:**

### Forniture completed !!



#### **ELECTRONICs:**

November irradiation tests do not indicate any serious issue

FPGA boards: design frozen, production started

ASICS boards: few improvements in the design made, small pre-production started

Production expected in spring.

MAROC3 chips: the delivery has been delayed significantly (was expected in June 2015);

The packaging company in California has been closed by a Court order: not clear how the Omega producer can get back the MAROC3 chips there.

A new packaging company in Belgium has successfully performed the packaging: the chips for the Front-End pre-production will be delivered next week, the other will follow soon.