

## Full CALICE list (last updated 18 October 2012)

---

### The CALICE Collaboration

**C. Adloff, J.-J. Blaising, M. Chefdeville, C. Drancourt, R. Gaglione, N. Geffroy,  
Y. Karyotakis, I. Koletsou, J. Prast, G. Vouters**

*Laboratoire d'Annecy-le-Vieux de Physique des Particules, Université de Savoie,  
CNRS/IN2P3, 9 Chemin de Bellevue BP110, F-74941 Annecy-le-Vieux CEDEX, France*

**B. Bilki\*, T. Cundiff, P. De Lurgio, G. Drake, K. Francis, B. Haberichter,  
V. Guarino, A. Kreps, J. Repond, J. Schlereth, F. Skrzecz, J. Smith†,  
D. Underwood, K. Wood, L. Xia, Q. Zhang, A. Zhao**

*Argonne National Laboratory, 9700 S. Cass Avenue, Argonne, IL 60439-4815, USA*

**E. Baldolemar, A. Brandt, K. De, J. Smith, K. J. Park, S. T. Park, M. Sosebee,  
A. White, J. Yu**

*Department of Physics, SH108, University of Texas, Arlington, TX 76019, USA*

**Z. Deng, Y. Li, Y. Wang, Q. Yue, Z. Yang**

*Tsinghua University, Department of Engineering Physics, Beijing, 100084, P.R. China*

**G. Eigen, D. Fehlker, H. Sandaker**

*University of Bergen, Inst. of Physics, Allegaten 55, N-5007 Bergen, Norway*

**T. Price, N. K. Watson**

*University of Birmingham, School of Physics and Astronomy, Edgbaston, Birmingham  
B15 2TT, UK*

**J. Butler, E. Hazen, S. Wu**

*Boston University, Department of Physics, 590 Commonwealth Ave., Boston, MA 02215,  
USA*

**J. S. Marshall, M. A. Thomson, D. R. Ward**

*University of Cambridge, Cavendish Laboratory, J J Thomson Avenue, CB3 0HE, UK*

**D. Benckroun, A. Hoummada, Y. Khoulaki**

*Université Hassan II Ain Chock, Faculté des sciences. B.P. 5366 Maarif, Casablanca,  
Morocco*

**J. Apostolakis, S. Arfaoui, M. Benoit, D. Dannheim, A. Dotti, F. Duarte Ramos,  
K. Elsener, G. Folger, H. Gerwig, C. Grefe, V. Ivantchenko, M. Killenberg,  
W. Klempt, E. van der Kraaij, C.B. Lam, L. Linssen, A. -I. Lucaci-Timoce,  
A. Muennich,<sup>‡</sup> J. Nardulli, S. Poss, P. Roloff, A. Sailer, D. Schlatter, E. Sicking,  
P. Speckmayer, J. Strube, V. Uzhinskiy**

*CERN, 1211 Genève 23, Switzerland*

**M. Oreglia**

*University of Chicago, Dept. of Physics, 5720 So. Ellis Ave., KPTC 201 Chicago, IL  
60637-1434, USA*

**M. Benyamna, C. Cârloganu, F. Fehr, P. Gay, S. Manen, L. Royer**

*Clermont Université, Université Blaise Pascal, CNRS/IN2P3, LPC, BP 10448, F-63000  
Clermont-Ferrand, France*

**M. Tytgat, N. Zaganidis**

*Ghent University, Department of Physics and Astronomy, Proeftuinstraat 86, B-9000  
Gent, Belgium*

**J. Ha**

*Korea Atomic Energy Research Institute, Taejon 305-600, South Korea*

**G. C. Blazey, D. Chakraborty, A. Dyshkant, D. Hedin, J. G. R. Lima, R. Salcido,  
V. Zutshi**

*NICADD, Northern Illinois University, Department of Physics, DeKalb, IL 60115, USA*

**V. Astakhov, V. A. Babkin, S. N. Bazylev, Yu. I. Fedotov, S. Golovatyuk,  
I. Golutvin, N. Gorbunov, A. Malakhov, S. Slepnev, I. Tyapkin, S. V. Volgin,  
Y. Zanevski, A. Zintchenko**

*Joint Institute for Nuclear Research, Joliot-Curie 6, 141980, Dubna, Moscow Region,  
Russia*

**D. Dzahini, L. Gallin-Martel, J. Giraud, D. Grondin, J. -Y. Hostachy, K. Krastev,  
J. Menu, F-E. Rarbi**

*Laboratoire de Physique Subatomique et de Cosmologie - Université Joseph Fourier  
Grenoble 1 - CNRS/IN2P3 - Institut Polytechnique de Grenoble, 53, rue des Martyrs,  
38026 Grenoble CEDEX, France*

**U. Cornett, D. David, G. Falley, K. Gadov, P. Göttlicher, C. Günter,  
B. Hermsberg, S. Karstensen, F. Krivan, K. Krüger, S. Lu, B. Lutz, S. Morozov,  
V. Morgunov,<sup>§</sup> M. Reinecke, F. Sefkow, P. Smirnov, M. Terwort,  
A. Vargas-Trevino**

*DESY, Notkestrasse 85, D-22603 Hamburg, Germany*

**N. Feege, E. Garutti, J. Haller, I. Marchesini, J. Samson**

*Univ. Hamburg, Physics Department, Institut für Experimentalphysik, Luruper Chaussee  
149, 22761 Hamburg, Germany*

**P. Eckert, T. Harion, H. -Ch. Schultz-Coulon, W. Shen, R. Stamen**  
*University of Heidelberg, Fakultät für Physik und Astronomie, Albert Uberle Str. 3-5  
2.OG Ost, D-69120 Heidelberg, Germany*

**E. Norbeck, D. Northacker, Y. Onel**  
*University of Iowa, Dept. of Physics and Astronomy, 203 Van Allen Hall, Iowa City, IA  
52242-1479, USA*

**E. J. Kim**  
*Chonbuk National University, Jeonju, 561-756, South Korea*

**G. Kim, D-W. Kim, K. Lee, S. C. Lee**  
*Kangnung National University, HEP/PD, Kangnung, South Korea*

**B. van Doren, G. W. Wilson**  
*University of Kansas, Department of Physics and Astronomy, Malott Hall, 1251 Wescoe  
Hall Drive, Lawrence, KS 66045-7582, USA*

**K. Kawagoe**  
*Department of Physics, Kobe University, Kobe, 657-8501, Japan*

**P. D. Dauncey**  
*Imperial College London, Blackett Laboratory, Department of Physics, Prince Consort  
Road, London SW7 2AZ, UK*

**M. Postranecky, M. Warren, M. Wing**  
*Department of Physics and Astronomy, University College London, Gower Street, London  
WC1E 6BT, UK*

**V. Boisvert, B. Green, A. Misiejuk, F. Salvatore<sup>¶</sup>**  
*Royal Holloway University of London, Dept. of Physics, Egham, Surrey TW20 0EX, UK*

**E. Cortina Gil, S. Mannai, G. Nuessle**  
*Centre for Particle Physics and Phenomenology (CP3) Université catholique de Louvain,  
Belgium*

**M. Bedjidian, A. Bonnevaux, C. Combaret, L. Caponetto, G. Grenier, R. Han,  
J.C. Ianigro, R. Kieffer, I. Laktineh, N. Lumb, H. Mathez, M. Vander Donckt**  
*Université de Lyon, Université de Lyon 1, CNRS/IN2P3, IPNL 4 rue E Fermi 69622,  
Villeurbanne CEDEX, France*

**J. Berenguer Antequera, E. Calvo Alamillo, M.-C. Fouz, J. Marin,  
J. Puerta-Pelayo, A. Verdugo**  
*CIEMAT, Centro de Investigaciones Energeticas, Medioambientales y Tecnológicas,  
Madrid, Spain*

**V. Büscher, L. Masetti, U. Schäfer, S. Tapprogge, R. Wanke, A. Welker**  
*Institut für Physik, Universität Mainz, D-55099 Mainz, Germany*

**D. S. Bailey, R. J. Barlow, R. J. Thompson**

*The University of Manchester, School of Physics and Astronomy, Schuster Laboratory,  
Manchester M13 9PL, UK*

**M. Batouritski, O. Dvornikov, Yu. Shulhevich, N. Shumeiko, A. Solin,  
P. Starovoitov, V. Tchekhovski, A. Terletski**

*National Centre of Particle and High Energy Physics of the Belarusian State University,  
M.Bogdanovich str. 153, 220040 Minsk, Belarus*

**F. Corriveau**

*Department of Physics, McGill University, Ernest Rutherford Physics Bldg., 3600  
University Ave., Montréal, Quebec, CANADA H3A 2T8*

**B. Bobchenko, M. Chadeeva, M. Danilov, A. Epifantsev, O. Markin, R. Mizuk,  
E. Novikov, V. Rusinov, E. Tarkovsky**

*Institute of Theoretical and Experimental Physics, B. Chermushkinskaya ul. 25,  
RU-117218 Moscow, Russia*

**V. Andreev, N. Kirikova, A. Komar, V. Kozlov, M. Negodaev, P. Smirnov,  
Y. Soloviev, A. Terkulov**

*P.N. Lebedev Physical Institute, Russian Academy of Sciences, 117924 GSP-1 Moscow,  
B-333, Russia*

**P. Buzhan, A. Ilyin, V. Kantserov, V. Kaplin, A. Karakash, E. Popova,  
S. Smirnov**

*Moscow Physical Engineering Inst., MEPhI, Dept. of Physics, 31, Kashirskoye shosse,  
115409 Moscow, Russia*

**N. Baranova, E. Boos, L. Gladilin, D. Karmanov, M. Korolev, M. Merkin,  
A. Savin, A. Voronin**

*M.V.Lomonosov Moscow State University, D.V.Skobel'tsyn Institute of Nuclear Physics  
(SINP MSU), 1/2 Leninskiye Gory, Moscow, 119991, Russia*

**A. Singh, A. Topkar**

*Bhabha Atomic Research Centre, Mumbai 400085, India*

**C. Kiesling, K. Seidel, F. Simon, C. Soldner, M. Szalay, M. Tesar, L. Weuste**

*Max Planck Inst. für Physik, Föhringer Ring 6, D-80805 Munich, Germany*

**J-E. Augustin, J. David, P. Ghislain, D. Lacour, L. Lavergne**

*Laboratoire de Physique Nucléaire et de Hautes Energies (LPNHE), UPMC, UPD,  
CNRS/IN2P3, 4 Place Jussieu, 75005 Paris, France*

**M. S. Amjad, J. Bonis, B. Bouquet, S. Callier, S. Conforti di Lorenzo,  
P. Cornebise, Ph. Doublet, F. Dulucq, M. Fauci Giannelli, J. Fleury,**

**T. Frisson, G. Guilhem, H. Li, G. Martin-Chassard, F. Richard, Ch. de la Taille,  
R. Poeschl, L. Raux, J. Rouëné, N. Seguin-Moreau, F. Wicek, Z. Zhang**

*Laboratoire de L'accélérateur Linéaire, Centre d'Orsay, Université de Paris-Sud XI, BP  
34, Bâtiment 200, F-91898 Orsay CEDEX, France*

**M. Anduze, K. Belkadhi, M. Bercher, V. Boudry, J-C. Brient, C. Clerc,  
R. Cornat, D. Decotigny, M. Frodin, F. Gastaldi, D. Jeans, A. Matthieu, P. Mora  
de Freitas, G. Musat, J.F. Roig, M. Ruan, H. Videau**

*Laboratoire Leprince-Ringuet (LLR) – École Polytechnique, CNRS/IN2P3, Palaiseau,  
F-91128 France*

**K-H. Park**

*Pohang Accelerator Laboratory, Pohang 790-784, South Korea*

**B. Bulanek, J. Zacek**

*Charles University, Institute of Particle & Nuclear Physics, V Holesovickach 2,  
CZ-18000 Prague 8, Czech Republic*

**J. Cvach, P. Gallus, M. Havranek, M. Janata, J. Kvasnicka, D. Lednicky,  
M. Marcisovsky, I. Polak, J. Popule, L. Tomasek, M. Tomasek, P. Ruzicka,  
P. Sicho, J. Smolik, V. Vrba, J. Zalesak**

*Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2,  
CZ-18221 Prague 8, Czech Republic*

**V. Gapienko, A. Semak, Yu. Sviridov, M. Ukhanov**

*Institute of High Energy Physics, Moscow Region, RU-142284 Protvino, Russia*

**B. Belhorma, H. Ghazlane**

*Centre National de l'Énergie, des Sciences et des Techniques Nucléaires, B.P. 1382, R.P.  
10001, Rabat, Morocco*

**R. E. Coath, J. P. Crooks, M. Stanitzki<sup>3</sup> R. Turchetta, Z. Zhang**

*Rutherford Appleton Laboratory, Chilton, Didcot, Oxon, OX11 0QX, UK*

**S. W. Nam, I. H. Park, J. Yang**

*Ewha Womans University, Dept. of Physics, Seoul 120, South Korea*

**Jong-Seo Chai, Jong-Tae Kim, Geun-Bum Kim**

*Sungkyunkwan University, 300 Cheoncheon-dong, Jangan-gu, Suwon, Gyeonggi-do  
440-746, South Korea*

**Y. Kim**

*Korea Institute of Radiological and Medical Sciences, 215-4 Gangeung-dong, Nowon-gu,  
Seoul 139-706, South Korea*

**J. Kang, Y. -J. Kwon**

*Yonsei University, Dept. of Physics, 134 Sinchon-dong, Sudaemoon-gu, Seoul 120-749,  
South Korea*

**Ilgoo Kim, Taeyun Lee, Jaehong Park, Jinho Sung**

*School of Electric Engineering and Computing Science, Seoul National University, Seoul  
151-742, South Korea*

**K. Kotera, H. Ono,<sup>†</sup>T. Takeshita**

*Shinshu Univ., Dept. of Physics, 3-1-1 Asaki, Matsumoto-shi, Nagano 390-861, Japan*

**A. Khan, D. H. Kim, J.E. Kim, D. J. Kong, Y.D. Oh, S. Uozumi**

*Kyungpook National Univ., Dept. of Physics, 1370 San Kyuk-dong, Puk ku, Taegu 635,  
South Korea*

**H. Koike, K. Tanaka, F. Ukegawa**

*University of Tsukuba, Graduate School of Pure and Applied Sciences, Tennoudai 1-1-1,  
Tsukuba, Ibaraki 305-8571, Japan*

**M. Götze, O. Hartbrich, J. Sauer, S. Weber, C. Zeitnitz**

*Bergische Universität Wuppertal Fachbereich 8 Physik, Gausstrasse 20, D-42097  
Wuppertal, Germany*

ABSTRACT: ...

---

\*Also at University of Iowa

†Also at University of Texas, Arlington

‡Now at DESY

§On leave from ITEP

¶Now at University of Sussex, Physics and Astronomy Department, Brighton, Sussex, BN1 9QH, UK

||Now at LPSC Grenoble

††Now at Nippon Dental University, 1-8 Hamaura-cho Chuo-ku, Niigata, 951-8580, Japan

## Acknowledgements

We would like to thank the technicians and the engineers who contributed to the design and construction of the prototypes, including U.Cornett, G.Falley, K.Gadow, P.Göttlicher, S.Karstensen and P.Smirnov. We also gratefully acknowledge the DESY and CERN managements for their support and hospitality, and their accelerator staff for the reliable and efficient beam operation. We would like to thank the HEP group of the University of Tsukuba for the loan of drift chambers for the DESY test beam. The authors would like to thank the RIMST (Zelenograd) group for their help and sensors manufacturing. This work was supported by the Bundesministerium für Bildung und Forschung, Germany; by the the DFG cluster of excellence ‘Origin and Structure of the Universe’ of Germany ; by the Helmholtz-Nachwuchsgruppen grant VH-NG-206; by the BMBF, grant no. 05HS6VH1; by the Alexander von Humboldt Foundation (Research Award IV, RUS1066839 GSA); by joint Helmholtz Foundation and RFBR grant HRJRG-002, SC Rosatom; by Russian Grants SS-1329.2008.2 and RFBR08-02-121000-0FI and by the Russian Ministry of Education and Science contract 02.740.11.0239; by MICINN and CPAN, Spain; by CRI(MST) of MOST/KOSEF in Korea; by the US Department of Energy and the US National Science Foundation; by the Ministry of Education, Youth and Sports of the Czech Republic under the projects AV0 Z3407391, AV0 Z10100502, LC527 and LA09042 and by the Grant Agency of the Czech Republic under the project 202/05/0653; and by the Science and Technology Facilities Council, UK.