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COMMISSIONING OF THE CMS EXPERIMENT WITH COSMIC RAYS

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CMS data processing workflows during an extended cosmic ray run

CMS Collaboration

ABSTRACT: The CMS Collaboration conducted a month-long data taking exercise, the Cosmic Run At Four Tesla, during October-November 2008, with the goal of commissioning the experiment for extended operation. With all installed detector systems participating, CMS recorded 270 million cosmic ray events with the solenoid at a magnetic field strength of 3.8 T. This paper describes the data flow from the detector through the various online and offline computing systems, as well as the workflows used for recording the data, for aligning and calibrating the detector, and for analysis of the data.

KEYWORDS: Detector control systems (detector and experiment monitoring and slow-control systems, architecture, hardware, algorithms, databases); Data acquisition concepts

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Universidad Autónoma de Madrid, Madrid, Spain
C. Albajar, M. Blanco Otano, J.F. de Trocóniz, A. Garcia Raboso, J.O. Lopez Berengueres

Universidad de Oviedo, Oviedo, Spain
J. Cuevas, J. Fernandez Menendez, I. Gonzalez Caballero, L. Lloret Iglesias, H. Naves Sordo, J.M. Vizan Garcia

Instituto de Física de Cantabria (IFCA), CSIC-Universidad de Cantabria, Santander, Spain
I.J. Cabrillo, A. Calderon, S.H. Chuang, I. Diaz Merino, C. Diez Gonzalez, J. Duarte Campderros, M. Fernandez, G. Gomez, J. Gonzalez Sanchez, R. Gonzalez Suarez, C. Jorda, P. Lobelle Pardo, A. Lopez Virto, J. Marco, R. Marco, C. Martinez Rivero, P. Martinez Ruiz del Arbol, F. Matorras, T. Rodrigo, A. Ruiz Jimeno, L. Scodellaro, M. Sobron Sanudo, I. Vila, R. Vilar Cortabitarte

CERN, European Organization for Nuclear Research, Geneva, Switzerland
D. Abbaneo, E. Albert, M. Alidra, S. Ashby, E. Auffray, J. Baechler, P. Baillon, A.H. Ball, S.L. Bally, D. Barney, F. Beaudette[19], R. Bellan, D. Benedetti, G. Benelli, C. Bernet, P. Bloch, S. Bolognesi, M. Bona, J. Bos, N. Bourgeois, T. Bourrel, H. Breuker, K. Bunkowski, D. Campi, T. Camporesi, E. Cano, A. Cattai, J.P. Chatelain, M. Chauvey, T. Christiansen, J.A. Coarasa Perez, A. Conde Garcia, R. Covarelli, B. Curé, A. De Roeck, V. Delachenal, D. Deyrail, S. Di Vincenzo[20], S. Dos Santos, T. Dupont, L.M. Edera, A. Elliott-Peisert, M. Eppard, M. Favre, N. Frank, W. Funk, A. Gaddi, M. Gastal, M. Gateau, H. Gerwig, D. Gigi, K. Gill, D. Giordano, J.P. Girod, F. Glege, R. Gomez-Reino Garrido, R. Goudard, S. Gowdy, R. Guida, L. Guiducci, J. Gutleber, M. Hansen, C. Hartl, J. Harvey, B. Hegner, H.F. Hoffmann, A. Holzner, A. Honma, M. Huhtinen, V. Innocente, P. Janot, G. Le Godec, P. Lecoq, C. Leonidopoulos, R. Loos, C. Lourenço, A. Lyonnet, A. Macpherson, N. Magini, J.D. Maillefaud, G. Maire, T. Mäki, L. Malgeri, M. Mannelli, L. Masetti, F. Meijers, P. Meridiani, S. Mersi, E. Meschi, A. Meynet Cordonnier, R. Moser, M. Mulders, J. Mulon, M. Noy, A. Oh, G. Olesen, A. Onnela, T. Orimoto, L. Orsini, E. Perez, G. Perinic, J.F. Pernot, P. Petagna, P. Petiot, A. Petrilli, A. Pfeiffer, M. Pierini, M. Pimiä, R. Pintus, B. Pirollet, H. Postema, A. Racz, S. Ravat, S.B. Rew, J. Rodrigues Antunes, G. Rolandi[21], M. Rovere, V. Ryjov, H. Sakulin, D. Samyn, H. Sauce, C. Schäfer, W.D. Schlatter, M. Schröder, C. Schwick, A. Sciaba, I. Segoni, A. Sharma, N. Siegrist, P. Siegrist, N. Sinanis, T. Sobrier, P. Sphicas[22], D. Spiga, M. Spiropulu[17], F. Stöckli, P. Traczyk, P. Tropea, J. Troska, A. Tsirou, L. Veillet, G.I. Veres, M. Voutilainen, P. Wertelaers, M. Zanetti

Paul Scherrer Institut, Villigen, Switzerland
W. Bertl, K. Deiters, W. Erdmann, K. Gabathuler, R. Horisberger, Q. Ingram, H.C. Kaestli, S. König, D. Kotlinski, U. Langenegger, F. Meier, D. Renker, T. Rohe, J. Sibille[23], A. Starodumov[24]

Institute for Particle Physics, ETH Zurich, Zurich, Switzerland
B. Betev, L. Caminada[25], Z. Chen, S. Cittolin, D.R. Da Silva Di Calafiori, S. Dambach[25], G. Dissertori, M. Dittmar, C. Eggel[25], J. Eugster, G. Faber, K. Freudenreich, C. Grab, A. Hervé, W. Hintz, P. Lecomte, P.D. Luckey, W. Lustermann, C. Marchica[25], P. Milenovic[26], F. Moortgat, A. Nardulli, F. Nessi-Tedaldi, L. Pape, F. Pauss, T. Punz, A. Rizzi, F.J. Ronga, L. Sala, A.K. Sanchez, M.-C. Sawley, V. Sordini, B. Stieger, L. Tauscher†, A. Thea, K. Theofilatos, D. Treille, P. Trüb[25], M. Weber, L. Wehrli, J. Weng, S. Zelepoukine[27]

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