



ATLAS NOTE

ATLAS-COM-PHYS-2012-XXX

July 23, 2012



Update of the SM Higgs combination with the 2012 $H \rightarrow WW$ analysis

R. Aben^a, H. Abouzeid^b, J. Alison^c, M. Antonelli^d, M. Aoki^e, A. Armbruster^f, O. Arnaez^g,
A. Barbaro Galtieri^h, T. Baroncelliⁱ, J. Barriero Guimaraes da Costa^j, A. Belloni^j,
E. Berglund^k, R. Bernhard^l, M. Bigliettiⁱ, V. Bortolotto^m, A. Boveiaⁿ, B. Brelrier^b, J. Bronner^o,
F. Canelliⁿ, B. Cerio^p, P. Chang^q, M. A. Chelstowska^k, S. Chen^r, B. Chow^s, G. Conti^j, P. Dang^l,
B. Di Micco^t, R. di Nardo^d, S. Diglio^u, M. Duehrssen^t, J. Elmsheuser^s, A. Farillaⁱ, E. Feng^v,
P. Ferrari^a, F. Fiedler^g, F. Filthaut^k, S. Gadatsch^a, J. Griffiths^w, P. Guenther^l, D. Hall^x, A. Harb^y,
F. Hariri^y, C. Hays^x, Y. Hernandez^z, T. M. Hong^c, J. Howard^x, J. P. Hsu^g, N. Ilic^b, M. Iodice^m,
K. Jakobs^l, S. Jin^A, J. Jovicevic^B, A. Kaluza^g, N. Karastathis^a, L. Kashif^C, R. Kehoe^D,
J. Keung^b, H. Kim^w, T. Kishimoto^E, P. Kluit^a, A. Kotwal^p, P. Krieger^b, J. Kroll^c, T. Kubota^u,
J. Kunkle^c, T. Lazovich^j, C. Lee^F, T. Lenz^a, C. Lester^c, H. Li^C, S. Li^G, Y. Li^y, Z. Liang^x,
E. Lipeles^c, J. Long^f, L. Ma^C, J. T. Machado Miguens^N, T. Masubuchi^H, T. Matsushita^E,
J. Mattmann^g, R. Mazini^F, C. Meineck^s, C. Melachrinouⁿ, B. Mellado^C, C. Mills^j, S. Moritz^g,
M. Neubauer^q, W. Okamura^l, P. Onyisiⁿ, D. Orestano^m, R. Ospanov^c, S. Pagan Griso^h, Y. Pan^C,
H. Peng^G, D. Pershey^j, F. Petrucci^m, R. Polifka^b, J. Qian^f, W. Quayle^C, P. Rados^u, B. Ramsom^f,
X. Ruan^y, R. Sandstrom^o, P. Savard^b, D. Schaefer^c, E. Schmidt^l, C. Schmitt^g, D. Schouten^J,
M. Shochetⁿ, H. Skottowe^j, K. Sliwa^K, W. Spearman^j, B. Stelzer^L, O. Stelzer-Chilton^J,
J. Strandberg^B, M. Testa^d, R. Teuscher^b, R. Thun^f, I. Tsukerman^M, J. Valls^z, J. van
Nieuwkoop^L, R. Vanguri^c, M. Venturi^l, N. Venturi^b, W. Verkerke^a, T. Vu Anh^l, S. Walch^f,
A. Walz^l, C. Weiser^l, J. Wetter^K, G. Wooden^f, S. L. Wu^C, K. Yoshihara^H, J. Yu^w, Z. Zhang^y,
Z. Zhao^G, Y. Zhu^G

^aNIKHEF, Amsterdam, The Netherlands

^bUniversity of Toronto, Toronto, Canada

^cUniversity of Pennsylvania, Philadelphia, USA

^dLaboratori Nazionali di Frascati, Frascati, Italy

^eNagoya University, Nagoya, Japan

^fUniversity of Michigan, Ann Arbor, USA

- ^g*Johannes-Gutenberg-Universitaet, Mainz, Germany*
^h*Lawrence Berkeley National Laboratory, Berkeley, USA*
ⁱ*INFN Roma Tre, Rome, Italy*
^j*Harvard University, Cambridge, USA*
^k*Radboud University Nijmegen, Nijmegen, The Netherlands*
^l*Albert-Ludwigs-Universitaet, Freiburg, Germany*
^m*Università di Roma Tre e sezione INFN, Rome, Italy*
ⁿ*University of Chicago, Chicago, USA*
^o*Max-Planck-Institut fuer Physik, Munich, Germany*
^p*Duke, Durham, USA*
^q*University of Illinois, Urbana-Champaign, USA*
^r*Nanjing University, Nanjing, China*
^s*Ludwig-Maximilians-Universitaet, Munich, Germany*
^t*CERN, Geneva, Switzerland*
^u*University of Melbourne, Melbourne, Australia*
^v*Argonne National Laboratory, Argonne, USA*
^w*University of Texas, Arlington, USA*
^x*Oxford University, Oxford, UK*
^y*Laboratoire d'Accélérateur Linéaire, Orsay, France*
^z*Universidad de Valencia, Valencia, Spain*
^A*IHEP, Beijing, China*
^B*Royal Institute of Technology (KTH), Stockholm, Sweden*
^C*University of Wisconsin, Madison, USA*
^D*Southern Methodist University, Dallas, USA*
^E*Kobe University, Kobe, Japan*
^F*Academia Sinica, Taipei, Taiwan*
^G*USTC, Hefei, China*
^H*University of Tokyo, Tokyo, Japan*
^I*Osaka University, Osaka, Japan*
^J*TRIUMF, Vancouver, Canada*
^K*Tufts University, Medford, USA*
^L*Simon Fraser University, Vancouver, Canada*
^M*ITEP, Moscow, Russia*
^N*LIP, Lisbon, Portugal*

Abstract

This note documents the update of the Standard Model Higgs combination with the 2012 $H \rightarrow WW$ analysis. A summary description of the changes in the combination procedure are described, and results of the new combination are presented.