



ELSEVIER

Contents lists available at ScienceDirect

Nuclear Instruments and Methods in Physics Research A

journal homepage: www.elsevier.com/locate/nima

A novel method for modeling the recoil in W boson events at hadron colliders

V.M. Abazov^{ao}, B. Abbott^{cb}, M. Abolins^{br}, B.S. Acharya^{ah}, M. Adams^{bd}, T. Adams^{bb}, E. Aguilo^{f,g,h,i}, M. Ahsan^{bl}, G.D. Alexeev^{ao}, G. Alkhazov^{as}, A. Alton^{bq,1}, G. Alverson^{bp}, G.A. Alves^b, L.S. Ancu^{an}, T. Andeen^{bf}, M.S. Anzelc^{bf}, M. Aoki^{bc}, Y. Arnoud^q, M. Arov^{bm}, M. Arthaud^u, A. Askew^{bb,2}, B. Åsman^{at,au}, O. Atramentov^{bb,2}, C. Avila^k, J. BackusMayes^{ci}, F. Badaud^p, L. Bagby^{bc}, B. Baldin^{bc}, D.V. Bandurin^{bl}, S. Banerjee^{ah}, E. Barberis^{bp}, A.-F. Barfuss^r, P. Bargassa^{cg}, P. Baringer^{bk}, J. Barreto^b, J.F. Bartlett^{bc}, U. Bassler^u, D. Bauer^{aw}, S. Beale^{f,g,h,i}, A. Bean^{bk}, M. Begalli^c, M. Begel^{bz}, C. Belanger-Champagne^{at,au}, L. Bellantoni^{bc}, A. Bellavance^{bc}, J.A. Benitez^{br}, S.B. Beri^{af}, G. Bernardi^t, R. Bernhard^{aa}, I. Bertram^{av}, M. Besançon^u, R. Beuselinck^{aw}, V.A. Bezzubov^{ar}, P.C. Bhat^{bc}, V. Bhatnagar^{af}, G. Blazey^{be}, S. Blessing^{bb}, K. Bloom^{bt}, A. Boehnlein^{bc}, D. Boline^{bo}, T.A. Bolton^{bl}, E.E. Boos^{aq}, G. Borissov^{av}, T. Bose^{bo}, A. Brandt^{ce}, R. Brock^{br}, G. Brooijmans^{bw}, A. Bross^{bc}, D. Brown^v, X.B. Bu^j, D. Buchholz^{bf}, M. Buehler^{ch}, V. Buescher^z, V. Bunichev^{aq}, S. Burdin^{av,3}, T.H. Burnett^{ci}, C.P. Buszello^{aw}, P. Calfayan^{ad}, B. Calpas^r, S. Calvet^s, J. Cammin^{bx}, M.A. Carrasco-Lizarraga^{al}, E. Carrera^{bb}, W. Carvalho^c, B.C.K. Casey^{bc}, H. Castilla-Valdez^{al}, S. Chakrabarti^{by}, D. Chakraborty^{be}, K.M. Chan^{bh}, A. Chandra^{ba}, E. Cheu^{ay}, D.K. Cho^{bo}, S.W. Cho^{aj}, S. Choi^{ak}, B. Choudhary^{ag}, T. Christoudias^{aw}, S. Cihangir^{bc}, D. Claes^{bt}, J. Clutter^{bk}, M. Cooke^{bc}, W.E. Cooper^{bc}, M. Corcoran^{cg}, F. Couderc^u, M.-C. Cousinou^r, D. Cutts^{cd}, M. Ćwiok^{ai}, A. Das^{ay}, G. Davies^{aw}, K. De^{ce}, S.J. de Jong^{an}, E. De La Cruz-Burelo^{al}, K. DeVaughan^{bt}, F. Déliot^u, M. Demarteau^{bc}, R. Demina^{bx}, D. Denisov^{bc}, S.P. Denisov^{ar}, S. Desai^{bc}, H.T. Diehl^{bc}, M. Diesburg^{bc}, A. Dominguez^{bt}, T. Dorland^{ci}, A. Dubey^{ag}, L.V. Dudko^{aq}, L. Duflot^s, D. Duggan^{bb}, A. Duperrin^r, S. Dutt^{af}, A. Dyshkant^{be}, M. Eads^{bt}, D. Edmunds^{br}, J. Ellison^{ba}, V.D. Elvira^{bc}, Y. Enari^{cd}, S. Eno^{bn}, M. Escalier^r, H. Evans^{bg}, A. Evdokimov^{bz}, V.N. Evdokimov^{ar}, G. Facini^{bp}, A.V. Ferapontov^{bl}, T. Ferbel^{bn,bx}, F. Fiedler^{ac}, F. Filthaut^{an}, W. Fisher^{bc}, H.E. Fisk^{bc}, M. Fortner^{be}, H. Fox^{av}, S. Fu^{bc}, S. Fuess^{bc}, T. Gadfort^{bw}, C.F. Galea^{an}, A. Garcia-Bellido^{bx}, V. Gavrilov^{ap}, P. Gay^p, W. Geist^v, W. Geng^{r,br}, C.E. Gerber^{bd}, Y. Gershtein^{bb,2}, D. Gillberg^{f,g,h,i}, G. Ginther^{bc,bx}, B. Gómez^k, A. Goussiou^{ci}, P.D. Grannis^{by}, S. Greder^v, H. Greenlee^{bc}, Z.D. Greenwood^{bm}, E.M. Gregores^d, G. Grenier^{w,x}, Ph. Gris^p, J.-F. Grivaz^s, A. Grohsjean^u, S. Grünendahl^{bc}, M.W. Grünewald^{ai}, F. Guo^{by}, J. Guo^{by}, G. Gutierrez^{bc}, P. Gutierrez^{cb}, A. Haas^{bw}, P. Haefner^{ad}, S. Hagopian^{bb}, J. Haley^{bu}, I. Hall^{br}, R.E. Hall^{az}, L. Han^j, K. Harder^{ax}, A. Harel^{bx}, J.M. Hauptman^{bj}, J. Hays^{aw}, T. Hebbeker^y, D. Hedin^{be}, J.G. Hegeman^{am}, A.P. Heinson^{ba}, U. Heintz^{bo}, C. Hensel^{ab}, I. Heredia-De La Cruz^{al}, K. Herner^{bq}, G. Hesketh^{bp}, M.D. Hildreth^{bh}, R. Hirosky^{ch}, T. Hoang^{bb}, J.D. Hobbs^{by}, B. Hoeneisen^o, M. Hohlfeld^z, S. Hossain^{cb}, P. Houben^{am}, Y. Hu^{by}, Z. Hubacek^m, N. Huske^t, V. Hynek^m, I. Iashvili^{bv}, R. Illingworth^{bc}, A.S. Ito^{bc}, S. Jabeen^{bo}, M. Jaffré^s, S. Jain^{cb}, K. Jakobs^{aa}, D. Jamin^r, R. Jesik^{aw}, K. Johns^{ay}, C. Johnson^{bw}, M. Johnson^{bc}, D. Johnston^{bt}, A. Jonckheere^{bc}, P. Jonsson^{aw}, A. Juste^{bc}, E. Kajfasz^r, D. Karmanov^{aq}, P.A. Kasper^{bc}, I. Katsanos^{bt}, V. Kaushik^{ce}, R. Kehoe^{cf}, S. Kermiche^r, N. Khalatyan^{bc}, A. Khanov^{cc}, A. Kharchilava^{bv}, Y.N. Kharzhev^{ao}, D. Khatidze^{cd}, M.H. Kirby^{bf}, M. Kirsch^y, B. Klima^{bc}, J.M. Kohli^{af}, J.-P. Konrath^{aa}, A.V. Kozelov^{ar}, J. Kraus^{br}, T. Kuhl^{ac}, A. Kumar^{bv}, A. Kupcoⁿ, T. Kurča^{w,x}, V.A. Kuzmin^{aq}, J. Kvita^l, F. Lacroix^p, D. Lam^{bh}, S. Lammers^{bg}, G. Landsberg^{cd}, P. Lebrun^{w,x}, H.S. Lee^{aj}, W.M. Lee^{bc}, A. Leflat^{aq}, J. Lellouch^t, L. Li^{ba}, Q.Z. Li^{bc}, S.M. Lietti^e, J.K. Lim^{aj}, D. Lincoln^{bc}, J. Linnemann^{br}, V.V. Lipaev^{ar}, R. Lipton^{bc}, Y. Liu^j, Z. Liu^{f,g,h,i}, A. Lobodenko^{as}, M. Lokajicekⁿ, P. Love^{av}, H.J. Lubatti^{ci}, R. Luna-Garcia^{al,4,5}, A.L. Lyon^{bc}, A.K.A. Maciel^b, D. Mackin^{cg}, P. Mättig^{ae}, R. Magaña-Villalba^{al}, P.K. Mal^{ay}, S. Malik^{bt}, V.L. Malyshev^{ao}, Y. Maravin^{bl}, B. Martin^q, R. McCarthy^{by}, C.L. McGivern^{bk}, M.M. Meijer^{an}, A. Melnitchouk^{bs}, L. Mendoza^k, D. Menezes^{be}, P.G. Mercadante^e, M. Merkin^{aq}, K.W. Merritt^{bc}, A. Meyer^y, J. Meyer^{ab}, N.K. Mondal^{ah},

H.E. Montgomery^{bc}, R.W. Moore^{f,g,h,i}, T. Moulik^{bk}, G.S. Muanza^r, M. Mulhearn^{bw}, O. Mundal^z, L. Mundim^c, E. Nagy^r, M. Naimuddin^{bc}, M. Narain^{cd}, H.A. Neal^{bq}, J.P. Negret^k, P. Neustroev^{as}, H. Nilsen^{aa}, H. Nogima^c, S.F. Novaes^e, T. Nunnemann^{ad}, G. Obrant^{as}, C. Ochando^s, D. Onoprienko^{bl}, J. Orduna^{al}, N. Oshima^{bc}, N. Osman^{aw}, J. Osta^{bh}, R. Otec^m, G.J. Otero y Garzón^a, M. Owen^{ax}, M. Padilla^{ba}, P. Padley^{cg}, M. Pangilinan^{cd}, N. Parashar^{bi}, S.-J. Park^{ab}, S.K. Park^{aj}, J. Parsons^{bw}, R. Partridge^{cd}, N. Parua^{bg}, A. Patwa^{bz}, B. Penning^{aa}, M. Perfilov^{aq}, K. Peters^{ax}, Y. Peters^{ax}, P. Pétroff^s, R. Piegaia^a, J. Piper^{br}, M.-A. Pleier^z, P.L.M. Podesta-Lerma^{al,1}, V.M. Podstavkov^{bc}, Y. Pogorelov^{bh}, M.-E. Pol^b, P. Polozov^{ap}, A.V. Popov^{ar}, M. Prewitt^{cg}, S. Protopopescu^{bz}, J. Qian^{bq}, A. Quadt^{ab}, B. Quinn^{bs}, A. Rakitine^{av}, M.S. Rangel^s, K. Ranjan^{ag}, P.N. Ratoff^{av}, P. Renkel^{cf}, P. Rich^{ax}, M. Rijssenbeek^{by}, I. Ripp-Baudot^v, F. Rizatdinova^{cc}, S. Robinson^{aw}, M. Rominsky^{cb}, C. Royon^u, P. Rubinov^{bc}, R. Ruchti^{bh}, G. Safronov^{ap}, G. Sajot^q, A. Sánchez-Hernández^{al}, M.P. Sanders^{ad}, B. Sanghi^{bc}, G. Savage^{bc}, L. Sawyer^{bm}, T. Scanlon^{aw}, D. Schaile^{ad}, R.D. Schamberger^{by}, Y. Scheglov^{as}, H. Schellman^{bf}, T. Schliephake^{ae}, S. Schlobohm^{ci}, C. Schwanenberger^{ax}, R. Schwienhorst^{br}, J. Sekaric^{bb}, H. Severini^{cb}, E. Shabalina^{ab}, M. Shamim^{bl}, V. Shary^u, A.A. Shchukin^{ar}, R.K. Shivpuri^{ag}, V. Siccaldi^v, V. Simak^m, V. Sirotenko^{bc}, P. Skubic^{cb}, P. Slattery^{bx}, D. Smirnov^{bh}, G.R. Snow^{bt}, J. Snow^{ca}, S. Snyder^{bz}, S. Söldner-Rembold^{ax}, L. Sonnenschein^y, A. Sopczak^{av}, M. Sosebee^{ce}, K. Soustruznik^l, B. Spurlock^{ce}, J. Stark^q, V. Stolin^{ap}, D.A. Stoyanova^{ar}, J. Strandberg^{bq}, M.A. Strang^{bv}, E. Strauss^{by}, M. Strauss^{cb}, R. Ströhmer^{ad}, D. Strom^{bd}, L. Stutte^{bc}, S. Sumowidagdo^{bb}, P. Svoisky^{an}, M. Takahashi^{ax}, A. Tanasijczuk^a, W. Taylor^{f,g,h,i,j}, B. Tiller^{ad}, M. Titov^u, V.V. Tokmenin^{ao}, I. Torchiani^{aa}, D. Tsybychev^{by}, B. Tuchming^u, C. Tully^{bu}, P.M. Tuts^{bw}, R. Unalan^{br}, L. Uvarov^{as}, S. Uvarov^{as}, S. Uzunyan^{be}, P.J. van den Berg^{am}, R. Van Kooten^{bg}, W.M. van Leeuwen^{am}, N. Varelas^{bd}, E.W. Varnes^{ay}, I.A. Vasilyev^{ar}, P. Verdier^{w,x}, L.S. Vertogradov^{ao}, M. Verzocchi^{bc}, M. Vesterinen^{ax}, D. Vilanova^u, P. Vint^{aw}, P. Vokac^m, R. Wagner^{bu}, H.D. Wahl^{bb}, M.H.L.S. Wang^{bx}, J. Warchol^{bh}, G. Watts^{ci}, M. Wayne^{bh}, G. Weber^{ac}, M. Weber^{bc,6}, L. Welty-Rieger^{bg}, A. Wenger^{aa,7}, M. Wetstein^{bn}, A. White^{ce}, D. Wicke^{ac}, M.R.J. Williams^{av}, G.W. Wilson^{bk}, S.J. Wimpenny^{ba}, M. Wobisch^{bm}, D.R. Wood^{bp}, T.R. Wyatt^{ax}, Y. Xie^{cd}, C. Xu^{bq}, S. Yacoob^{bf}, R. Yamada^{bc}, W.-C. Yang^{ax}, T. Yasuda^{bc}, Y.A. Yatsunenko^{ao}, Z. Ye^{bc}, H. Yin^j, K. Yip^{bz}, H.D. Yoo^{cd}, S.W. Youn^{bc}, J. Yu^{ce}, C. Zeitnitz^{ae}, S. Zelitch^{ch}, T. Zhao^{ci}, B. Zhou^{bq}, J. Zhu^{by,*}, M. Zielinski^{bx}, D. Zieminska^{bg}, L. Zivkovic^{bw}, V. Zutshi^{be}, E.G. Zverev^{aq}, the DØ Collaboration

^a Universidad de Buenos Aires, Buenos Aires, Argentina

^b LAFEX, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil

^c Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

^d Universidade Federal do ABC, Santo André, Brazil

^e Instituto de Física Teórica, Universidade Estadual Paulista, São Paulo, Brazil

^f University of Alberta, Edmonton, Alberta, Canada

^g Simon Fraser University, Burnaby, British Columbia, Canada

^h York University, Toronto, Ontario, Canada

ⁱ McGill University, Montreal, Quebec, Canada

^j University of Science and Technology of China, Hefei, People's Republic of China

^k Universidad de los Andes, Bogotá, Colombia

^l Center for Particle Physics, Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic

^m Czech Technical University in Prague, Prague, Czech Republic

ⁿ Center for Particle Physics, Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic

^o Universidad San Francisco de Quito, Quito, Ecuador

^p LPC, Université Blaise Pascal, CNRS/IN2P3, Clermont, France

^q LPSC, Université Joseph Fourier Grenoble 1, CNRS/IN2P3, Institut National Polytechnique de Grenoble, Grenoble, France

^r CPPM, Aix-Marseille Université, CNRS/IN2P3, Marseille, France

^s LAL, Université Paris-Sud, IN2P3/CNRS, Orsay, France

^t LPNHE, IN2P3/CNRS, Universités Paris VI and VII, Paris, France

^u CEA, Irfu, SPP, Saclay, France

^v IPHC, Université de Strasbourg, CNRS/IN2P3, Strasbourg, France

^w IPNL, Université Lyon 1, CNRS/IN2P3, Villeurbanne, France

^x Université de Lyon, Lyon, France

^y III. Physikalisches Institut A, RWTH Aachen University, Aachen, Germany

^z Physikalisches Institut, Universität Bonn, Bonn, Germany

^{aa} Physikalisches Institut, Universität Freiburg, Freiburg, Germany

^{ab} II. Physikalisches Institut, Georg-August-Universität Göttingen, Göttingen, Germany

^{ac} Institut für Physik, Universität Mainz, Mainz, Germany

^{ad} Ludwig-Maximilians-Universität München, München, Germany

^{ae} Fachbereich Physik, University of Wuppertal, Wuppertal, Germany

^{af} Panjab University, Chandigarh, India

^{ag} Delhi University, Delhi, India

^{ah} Tata Institute of Fundamental Research, Mumbai, India

^{ai} University College Dublin, Dublin, Ireland

^{aj} Korea Detector Laboratory, Korea University, Seoul, South Korea

^{ak} Sungkyunkwan University, Suwon, South Korea

Download English Version:

<https://daneshyari.com/en/article/1826844>

Download Persian Version:

<https://daneshyari.com/article/1826844>

[Daneshyari.com](https://daneshyari.com)