From: Carlo Oleari <Carlo.Oleari@mib.infn.it>
Subject: Nason's fest
Date: 12 January 2022 at 16:15:12 CET
To: Giovanni Ridolfi <Giovanni.Ridolfi@ge.infn.it>
Cc: Emanuele Re <Emanuele.Re@mib.infn.it>, Simone Alioli
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Caro Giovanni

On September 15 and 16, 2022 we plan to celebrate Paolo Nason's career in
Physics with an in-person conference in his honour, to be held at the
University of Milano-Bicocca, with title:

A Life in Phenomenology: a conference in honour of Paolo Nason

We would like to invite you to give a talk with the title and the subject
that you prefer, maybe also taking into consideration the peculiarity
of the event. Since you have known Paolo for a long time, it would be nice
if you could include some funny anecdotes about him.

*** Facci un po' ridere!! ***

Some lessons I gained from Paolo

A Life in Phenomenology:
a conference in honour of Paolo Nason
Università di Milano Bicocca, September 15th, 2022

Giovanni Ridolfi
Università di Genova and INFN Genova, Italy

Amici miei atto II, 1982

Nuclear Physics B357 (1991) 409–438
North-Holland

QCD RADIATIVE CORRECTIONS TO Z BOSON PAIR PRODUCTION IN HADRONIC COLLISIONS

B. MELE

CERN, Geneva, Switzerland

P. NASON

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G. RIDOLFI

INFN, Sezione di Genova, Italy

Received 12 November 1990

We present a calculation of the corrections of order α_S for Z pair production in hadronic collisions. We give analytic formulae for the differential parton cross sections. For the total parton cross sections we provide quite accurate fits to the numerically integrated results, which can be easily used for phenomenological applications. We also present a few phenomenological results for the total cross section at energies of interest. We find that the corrections are positive in all the cases that we have considered, and are of the order of 20% to 30% of the total.

My first paper with Paolo

The three-body contribution to our cross section, including the phase space, is then given by

$$d\sigma_{q\bar{q}}^{(r)} = HN\, d\Phi_2^{(x)} \frac{s^{-1-\epsilon}}{2\pi} dy \sin^{-2\epsilon}\theta_2\, d\theta_2 (1-x)^{-1-2\epsilon}(1-y^2)^{-1-\epsilon} f_{q\bar{q}}(x,y,\theta_1,\theta_2). \tag{2.27}$$

We can now use the following expansions valid for small ϵ

$$(1-x)^{-1-2\epsilon} = -\frac{\beta^{-4\epsilon}}{2\epsilon}\delta(1-x) + \left(\frac{1}{1-x}\right)_\rho - 2\epsilon\left(\frac{\log(1-x)}{1-x}\right)_\rho + O(\epsilon^2), \tag{2.28}$$

$$(1-y^2)^{-1-\epsilon} = -[\delta(1-y)+\delta(1-y)]\frac{2^{-1-2\epsilon}}{\epsilon} + \tfrac{1}{2}\left[\left(\frac{1}{1-y}\right)_+ + \left(\frac{1}{1+y}\right)_+\right] + O(\epsilon), \tag{2.29}$$

where the distributions in round brackets are defined according to the prescriptions

Page 418, eq. (2.29)

Nuclear Physics B 373 (1992) 295–345
North-Holland

NUCLEAR
PHYSICS B

Heavy-quark correlations in hadron collisions at next-to-leading order

Michelangelo L. Mangano

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Received 3 September 1991
Accepted for publication 4 November 1991

We present a calculation of the fully exclusive parton cross sections for heavy-quark production at order $O(\alpha_S^3)$ in QCD. Our result includes the Born cross section for producing a $Q\bar{Q}$ pair, of order $O(\alpha_S^2)$, the virtual corrections to the Born cross section, of order $O(\alpha_S^3)$, and the cross section for producing a $Q\bar{Q}$ pair plus a light parton, of order $O(\alpha_S^3)$. We can therefore compute distributions in which correlations among the heavy quarks (and, if present, the associated jet) are correctly taken into account up to order $O(\alpha_S^3)$. We present some applications of phenomenological interest to top, bottom and charm production at hadron colliders.

Z. Phys. C 68, 257–267 (1995)

ZEITSCHRIFT
FÜR PHYSIK C

A study of ultraviolet renormalon ambiguities in the determination of α_S from τ decay

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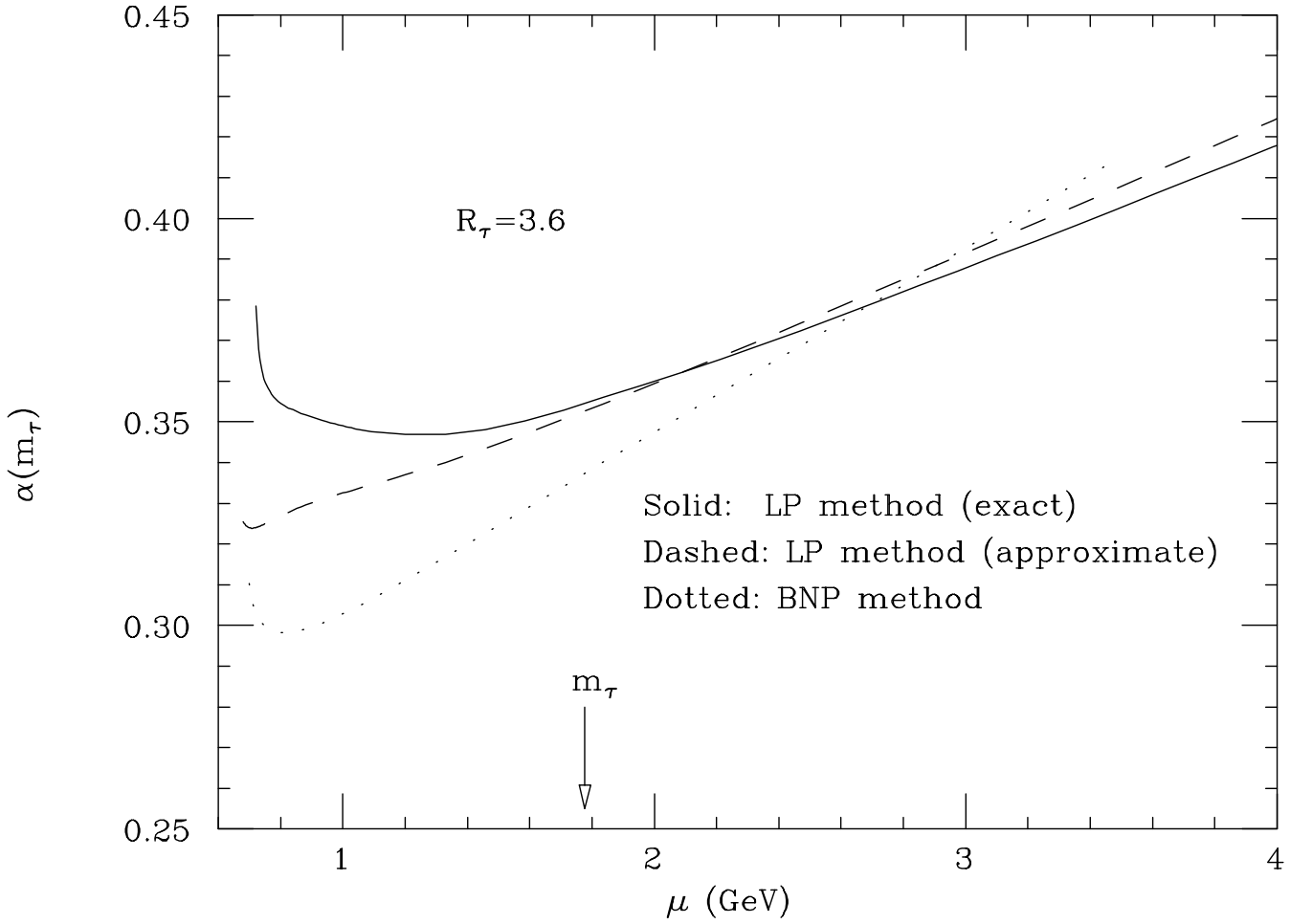
Received: 12 January 1995


0.45
0.40
0.35
0.30
0.25
$\alpha(m_\tau)$
R_τ=3.6
Solid: LP method (exact)
Dashed: LP method (approximate)
Dotted: BNP method
m_τ
1
2
3
4
μ (GeV)

Nordita 1996

PhD lectures on the Standard Model and QCD in Milano and Genova

$\sim$ 1993 – 1998

Published by Institute of Physics Publishing for SISSA

Received: *July 4, 2006*
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A positive-weight next-to-leading-order Monte Carlo for Z pair hadroproduction

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A positive-weight next-to-leading-order Monte Carlo for heavy flavour hadroproduction

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Paolo Nason

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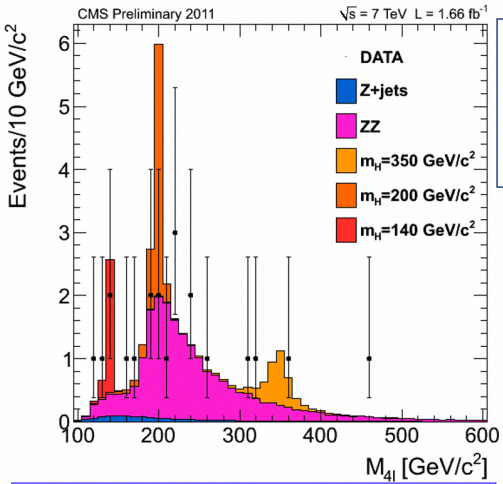
Many thanks, Paolo!

I got to know you first (~30 years go) via your jokes – Giovanni's emails – and then in CMS and the LHCHXSWG!

You played a key role in LHC physics and in the Higgs boson discovery.

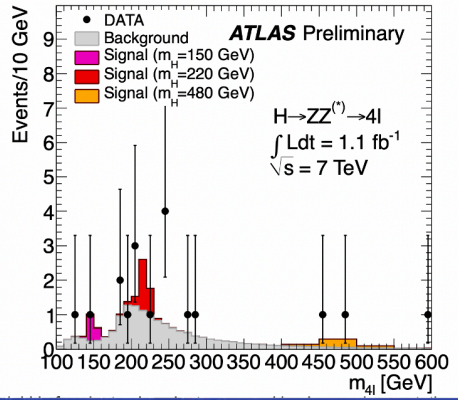
I just mention here a very hard period in summer 2011 where without you we could not have reached confidence in the HZZ4l analysis.

Grenoble EPS Conference July 2011



We went into « panic » mode
In July 2011: we had to defend all the events, one by one, we scrutinised all the MonteCarlo (Nason&Co had to work like mad to give us Powheg for 4leptons, with all in…)

We were under heavy review from the collaboration, to be finally approved and able to present the result at EPS-11



Antonio Salieri (Murray Abraham) from Amadeus, M. Forman, 1984

“I still say to myself when I am depressed, and find myself forced to listen to pompous and tiresome people, ’Well, I have done one thing you could never have done, and that is to have collaborated with both Littlewood and Ramanujan on something like equal terms.” — G.H. Hardy, A Mathematician’s Apology

Ancor oggi nei momenti di depressione, quando sono costretto ad ascoltare della gente pedante e presuntuosa, mi dico: ”Beh, io ho fatto qualcosa che voi non sareste mai stati capaci di fare: ho collaborato con Littlewood e Ramanujan, su un piano quasi di parità”.

Dick Carter

To have such a friend, one must have luck in life. – R. Carter

Grazie Paolo!