

Parity-Violating Elastic Electron Nucleon Scattering:
Measurement of the Strange Quark Content of the Nucleon
and Towards a Measurement of the Weak Charge of the Proton

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Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
in
Physics

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April 30, 2010
Blacksburg, Virginia

Keywords: Strange quark, transverse, beam normal single spin asymmetry, G_0 , Q_{weak}
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Subject: Re: copyright permissions
From: "Roger D. Carlini" <carlini@jlab.org>
Date: Thu, 15 Apr 2010 13:04:47 -0400
To: Juliette Mammei <jmammei@vt.edu>

Hi Juliette:

Speaking for the Qweak collaboration (not for JLab) you have permission to use documents in the Qweak data base in your thesis. Please reference any original work/calculations and papers appropriately.

Best Regards

Roger

On 4/15/10 12:58 PM, Juliette Mammei wrote:

Hey Roger,

May I have permission to reproduce figures from the Qweak webpage, documents in the experiment's document database and electronic logbooks in my thesis?

Thanks,

Juliette

Subject: Re: copyright permission
From: "Roger D. Carlini" <carlini@jlab.org>
Date: Thu, 15 Apr 2010 16:21:51 -0400
To: Juliette Mammei <jmammei@vt.edu>

Hi Juliette:

Yes.

Best Regards

Roger

On 4/15/10 1:44 PM, Juliette Mammei wrote:

Hey Roger,

I am appropriately citing all the work but I also need the permission to reproduce the figures. May I also reproduce figures from this paper:

Testing the standard model by precision measurement of the weak charges of quarks. Physical Review Letters, 99:122003, (2007).

Thanks,

Juliette

Subject: RE: copyright permissions

From: Douglas Beck <dhbeck@illinois.edu>

Date: Thu, 15 Apr 2010 14:30:53 -0500

To: 'Juliette Mammei' <jmammei@vt.edu>

CC: "Douglas H. Beck" <dhbeck@illinois.edu>, 'Mark Pitt' <pitt@vt.edu>

Dear Juliette,

To the extent I have the authority to do so, I hereby grant permission to reproduce figures from any and all internal G0 documents in your thesis.

Cheers,
Doug

Professor Douglas H. Beck
Department of Physics
University of Illinois at Urbana-Champaign
1110 West Green Street
Urbana, IL 61801-3080
(217) 244-7994
(217) 333-1215 (FAX)

-----Original Message-----

From: Juliette Mammei [<mailto:jmammei@vt.edu>]

Sent: Thursday, April 15, 2010 11:58 AM

To: Douglas Beck

Subject: copyright permissions

Hey Doug,

May I have permission to reproduce figures from the G0 webpages, documents in the experiment's document database and electronic logbooks in my thesis?

Thanks,

Juliette

Subject: Re: copyright permissions
From: Silviu Covrig <covrig@jlab.org>
Date: Thu, 15 Apr 2010 17:43:07 -0400
To: Juliette Mammei <jmammei@vt.edu>

Hello Juliette,

Sure, no problem, but, now, thanks to VPI, you owe me big time.
Good luck with your defense,

Silviu

Juliette Mammei wrote:

Hey Silviu,

May I have permission to reproduce figures from this document

The cryogenic target for the G0 experiment at Jefferson lab. Nuc. Ins. and Meth. in
Phys. Res. A, 551:218-235, (2005).

in my thesis?

Virginia Tech requires that we get copyright permission.

Thanks,

Juliette

Draft 09/01/2009

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Name: Juliette Mammei

Description of item under review for fair use: G. M. Jones. A precision measurement of the weak mixing angle in moller scattering at low Q², (2004).

Report generated on: 05-10-2010 at : 09:08:23

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Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Subject: Re: copyright permissions
From: Michael Kohl <kohlm@jlab.org>
Date: Thu, 15 Apr 2010 13:07:25 -0400 (EDT)
To: Juliette Mammei <jmammei@vt.edu>

Dear Juliette,
no problem, go ahead (=I don't care).
Good luck with your defense!
Michael

On Thu, 15 Apr 2010, Juliette Mammei wrote:

Hello Michael,

I am going to be defending my thesis soon, and Virginia Tech requires us to get copyright permissions for any figures that we want to reproduce. I wanted to use your plots of the nucleon form factors from this paper:

Elastic form factors of the proton, neutron and deuteron. Nuclear Physics A, 805:361-368, (2008).

All I need is your response to this email saying that I have permission to use the figure in my thesis, if you agree.

Thanks,

Juliette

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+-----+
| Dr. Michael Kohl                               | Staff Research Scientist |
| Assistant Professor                            |                         |
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| Email: kohlm@jlab.org, K.Michael.Kohl@gmx.de |                         |
+-----+
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Subject: Re: copyright permissions

From: mack@jlab.org

Date: Thu, 15 Apr 2010 15:28:34 -0400 (EDT)

To: Juliette Mammei <jmammei@vt.edu>

Juliette,

Sure. Tell me which one it is so I can correct any mistakes. I've already been embarassed once.

Dave

Hey Dave,

May I have permission to reproduce a figure from your DNP talk in my thesis? VT requires that I get copyright permissions.

Thanks,

Juliette

Subject: Re: permission to use figure
From: Wally Melnitchouk <wmelnit@jlab.org>
Date: Thu, 15 Apr 2010 12:43:19 -0400 (EDT)
To: Juliette Mammei <jmammei@vt.edu>

Hi Juliette,

Yes, I remember you. I'm happy for you to use figures from our paper in your thesis.

Good luck with your thesis defense!

Wally

On Thu, 15 Apr 2010, Juliette Mammei wrote:

Hey Wally,

I don't know if you remember me, but we played softball together for JLab several years ago. I was a graduate student on G0 and I will be defending my thesis soon. I wanted to reproduce a figure from one of your recent papers on two boson exchange, the citation is:

Detailed analysis of two-boson exchange in parity-violating e-p scattering. Physical Review C, 79:055201-12, (2009). Virginia Tech requires that we obtain permission to reproduce figures in our theses even though it is a scholarly work. All I need is to include a copy of your reply email granting me permission with the submission of my thesis, if you agree.

Thanks,

Juliette

Subject: Re: G0 Transverse Asymmetries
From: Barbara Pasquini <Barbara.Pasquini@pv.infn.it>
Date: Tue, 06 Apr 2010 10:28:43 +0200 (CEST)
To: Juliette Mammei <jmammei@vt.edu>

Dear Juliette,

the figure you sent me is quite interesting.
You can surely use all the figures you like from our paper (I did not ask him explicitly, but I am sure also Marc will agree with it).
If you need the data files to generate the figures by yourself, do not hesitate to ask me.

For the G0 Paper, I am willing to run the calculation at your kinematics. I have other unpublished results which were run for the MAMI kinematics, and probably not useful for you (for the beam energy of 315 MeV). The only warning I have is that the calculation takes a lot of computer time to produce numbers (something like 3-4 weeks for one figure in the paper). We should take it into account in the time schedule of your paper. For the deuteron, unfortunately I have no results. I can only produce numbers for the neutron and proton separately, but not for the deuteron.

Best regards and good work for your thesis, Barbara

Subject: Re: copyright permissions
From: Mark Pitt <pitt@vt.edu>
Date: Fri, 16 Apr 2010 05:26:58 -0400
To: Juliette Mammei <jmammei@vt.edu>

Hi Juliette,

Yes, you have permission to reproduce figures from VT Qweak elog, documents and my talks and conference proceedings in your thesis.

Mark

Juliette Mammei wrote:

Hey Mark,

May I have permission to reproduce figures from VT Qweak elog, documents and your talks and papers in my thesis?

Thanks,

Juliette

Subject: Re: copyright permissions
From: "Steven P. Wells" <wells@phys.latech.edu>
Date: Fri, 16 Apr 2010 11:43:20 -0500
To: Juliette Mammei <jmammei@vt.edu>

Hi Juliette,

Of course you can use it.
Good luck with your thesis.
If you'd like comments and/or
suggestions, just let me know
(and send me the link to where
your current version is).

Steve

On 04/15/2010 11:48 AM, Juliette Mammei wrote:

Hey Steve,

I was wondering if I could reproduce a figure of a feynman diagram that you have in this paper:

Measurement of the vector analyzing power in elastic electron-proton scattering as a probe of the double virtual compton amplitude. Physical Review C, 63:064001, (2001).

I have to get permission for Virginia Tech to use it in my thesis. All I need is your affirmative response to this email.

Thanks!

Juliette