

# **Cen Zhang's contributions at the University of Illinois**

**Scott Willenbrock**

**Department of Physics**

**University of Illinois at Urbana-Champaign**

**Multi-Boson Interactions 2022**

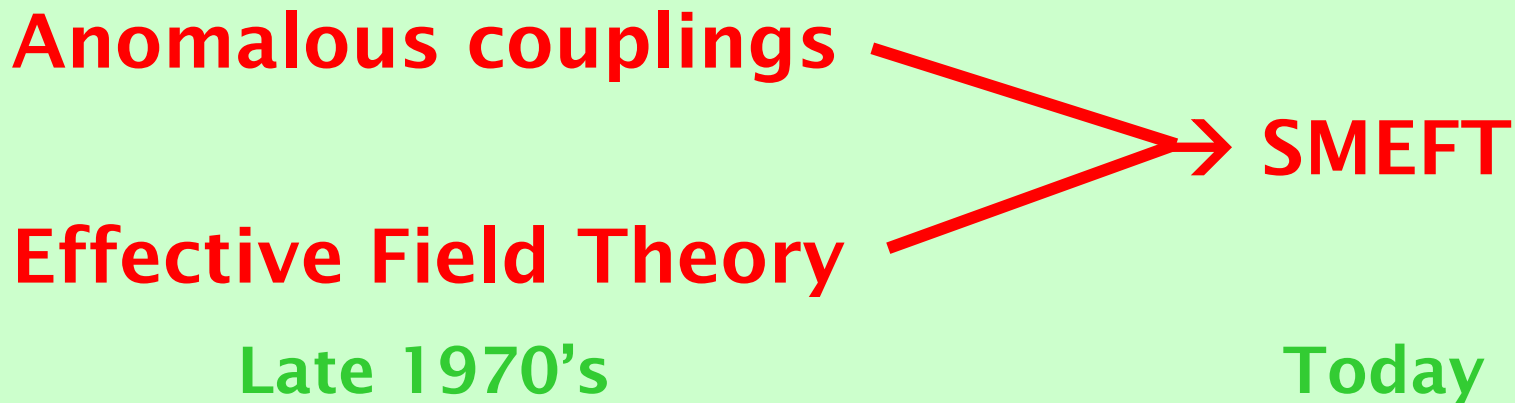
**August 25, 2022**

# Cen Zhang: 2006-2011

- **Nick Greiner (postdoc)**
- **Harrison Mebane (graduate student)**
  - **Celine Degrande, Olivier Mattelaer,  
Tim Stelzer, Wolfgang Kilian**

# Cen Zhang: 2006-2011

- Nick Greiner (postdoc)
- Harrison Mebane (graduate student)
  - Celine Degrande, Olivier Mattelaer, Tim Stelzer, Wolfgang Kilian



# Top Quark EFT

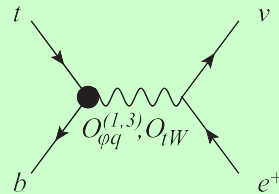
PHYSICAL REVIEW D **83**, 034006 (2011)

## Effective-field-theory approach to top-quark production and decay

Cen Zhang and Scott Willenbrock

*Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, Illinois 61801, USA*

(Received 3 September 2010; published 7 February 2011)



# Top Quark EFT

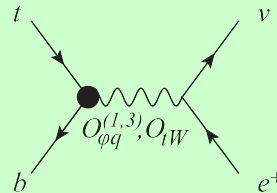
PHYSICAL REVIEW D **83**, 034006 (2011)

## Effective-field-theory approach to top-quark production and decay

Cen Zhang and Scott Willenbrock

*Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, Illinois 61801, USA*

(Received 3 September 2010; published 7 February 2011)



## Effective field theory for nonstandard top quark couplings

Nicolas Greiner, Scott Willenbrock, Cen Zhang\*

Phys. Lett. B

*Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, IL 61801, United States*

PHYSICAL REVIEW D **86**, 014024 (2012)

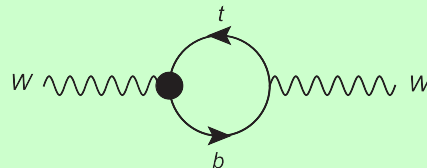
## Constraints on nonstandard top quark couplings

Cen Zhang,<sup>1</sup> Nicolas Greiner,<sup>1,2</sup> and Scott Willenbrock<sup>1</sup>

<sup>1</sup>*Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, Illinois 61801, USA*

<sup>2</sup>*Max-Planck-Institut für Physik, Föhringer Ring 6, 80805 München, Germany*

(Received 31 January 2012; published 25 July 2012)



# Weak Boson EFT

Effective field theory of precision electroweak physics at one loop

Harrison Mebane<sup>a,\*</sup>, Nicolas Greiner<sup>a,b</sup>, Cen Zhang<sup>a,c</sup>, Scott Willenbrock<sup>a</sup>

Phys. Lett. B

<sup>a</sup> Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, IL 61801, United States

<sup>b</sup> Max-Planck-Institut für Physik, Föhringer Ring 6, 80805 München, Germany

<sup>c</sup> Centre for Cosmology, Particle Physics and Phenomenology (CP3), Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium

PHYSICAL REVIEW D **88**, 015028 (2013)

## Constraints on electroweak effective operators at one loop

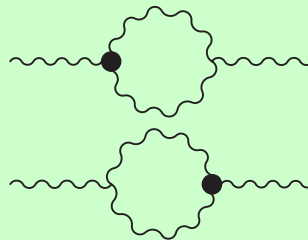
Harrison Mebane,<sup>1</sup> Nicolas Greiner,<sup>1,2</sup> Cen Zhang,<sup>1,3</sup> and Scott Willenbrock<sup>1</sup>

<sup>1</sup>Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, Illinois 61801, USA

<sup>2</sup>Max-Planck-Institut für Physik, Föhringer Ring 6, 8085 München, Germany

<sup>3</sup>Centre for Cosmology, Particle Physics and Phenomenology (CP3), Université Catholique de Louvain,  
B-1348 Louvain-la-Neuve, Belgium

(Received 14 June 2013; published 25 July 2013)



# Reviews/pedagogy

## Effective field theory: A modern approach to anomalous couplings

Céline Degrande<sup>a,b,\*</sup>, Nicolas Greiner<sup>a,c</sup>, Wolfgang Kilian<sup>a,d</sup>,  
Olivier Mattelaer<sup>b</sup>, Harrison Mebane<sup>a</sup>, Tim Stelzer<sup>a</sup>,  
Scott Willenbrock<sup>a</sup>, Cen Zhang<sup>a,b</sup>

<sup>a</sup>Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, IL 61801, United States

<sup>b</sup>Centre for Particle Physics and Phenomenology (CP3), Université Catholique de Louvain, Chemin du Cyclotron 2, B-1348 Louvain-la-Neuve, Belgium

<sup>c</sup>Max-Planck-Institut für Physik, Föhringer Ring 6, 80805 München, Germany

<sup>d</sup>University of Siegen, Fachbereich Physik, D-57068 Siegen, Germany

Annals of Physics

## Effective Field Theory Beyond the Standard Model

Scott Willenbrock<sup>1,2</sup> and Cen Zhang<sup>3</sup>

<sup>1</sup>Department of Physics, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801

<sup>2</sup>Fermi National Accelerator Laboratory, Batavia, Illinois 60510

<sup>3</sup>Centre for Cosmology, Particle Physics and Phenomenology (CP3), Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium; email: cen.zhang@uclouvain.be

Rev. Mod. Phys.

# and ...

PHYSICAL REVIEW D **85**, 013002 (2012)

## Higgs decay to two photons

William J. Marciano,<sup>1</sup> Cen Zhang,<sup>2</sup> and Scott Willenbrock<sup>2</sup>

<sup>1</sup>*Physics Department, Brookhaven National Laboratory, Upton, New York 11973, USA*

<sup>2</sup>*Department of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, Illinois 61801, USA*

(Received 24 September 2011; published 4 January 2012)

