

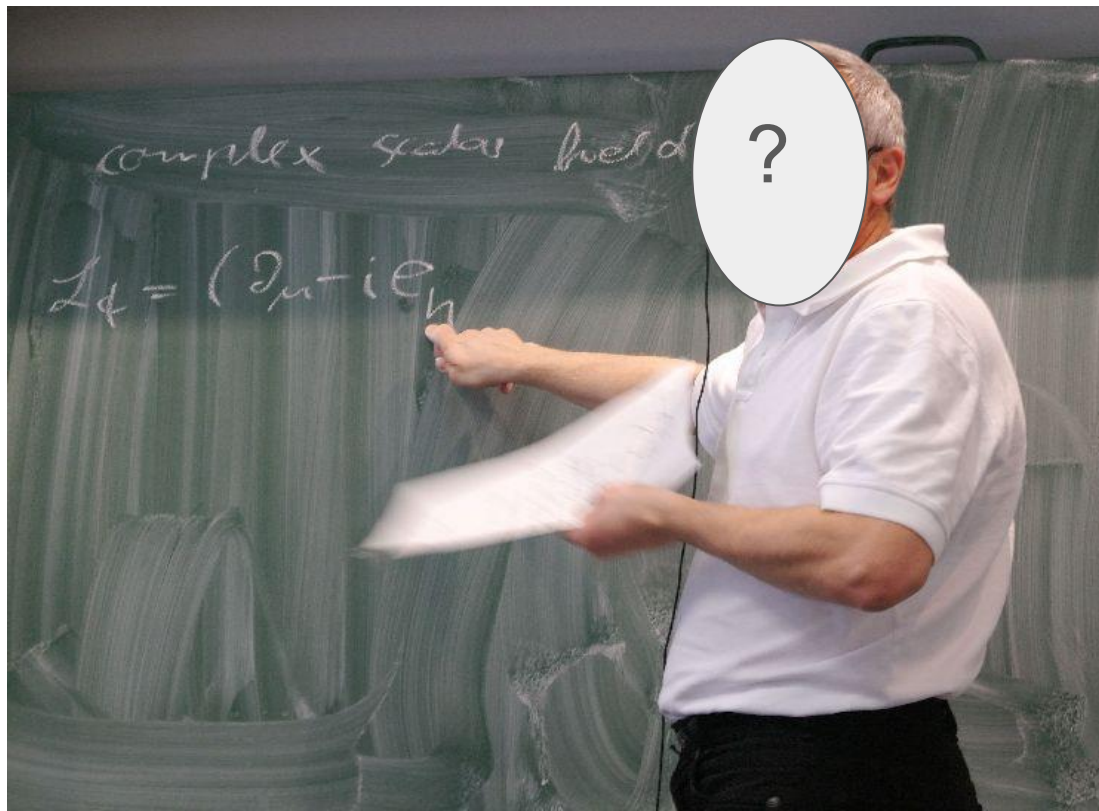
Novel combined results in Ringwald measurements

DESY THEORY WORKSHOP & Ringwald fest 2024

Introduction & the data-set

- Today's presentation on measurements of the elusive Ringwald particle, more often found at sea than on land!
 - To find the specimen, help of the audience will be appreciated
-
- Data collected in 2012-2015 during my time as first postdoc at the ALPS-II experiment (and the first postdoc that ALPS-II had!)
 - Data statistically combined with records from independent trials:

Sarah Andreas & Paola Arias Reyes



Rough measurement of the expected cross-section and colors, for other measurements of next slides

Stomach

- Specimen is known to have a very resistant stomach
- Was seen able to digest DESY canteen food on a regular and decade-lasting time-span
- Particularly extreme example of February 2013: The DESY canteen “anti-tank gun”



Feet

- Very skilled in certain task:
- Porsche owners in proximity of DESY measured to be very annoyed
- Specimen overtakes Porsches routinely at red lights using an electric smart
- Licence plate number suspected to be PI-ON 315



[link to video](#)

Heart

- Heart 'lost' on a sailing boat in the Elbe river, seen routinely to be searched by specimen arriving on his electric smart
- Rumored to have resisted several lucrative proposed resettlements in renowned places over the fear to lose access to a sailing boat!
- One of the boats on this picture belongs to specimen



Hand

- Prefers digital communication (usually seen with phone or ipad) but insists on writing with hands!
- Attracts easily attention of fellow researchers



Hand II

- Prefers digital communication but insists on writing with hands
- **Results in sometimes illegible statements (unless one already knows what he's talking about ;-)**
- seems not to negatively impact collaboration with other people of his kind (see next slide!)

QCD accommodates
gauge and Lorentz-invar.
renormalizable
"theta" term

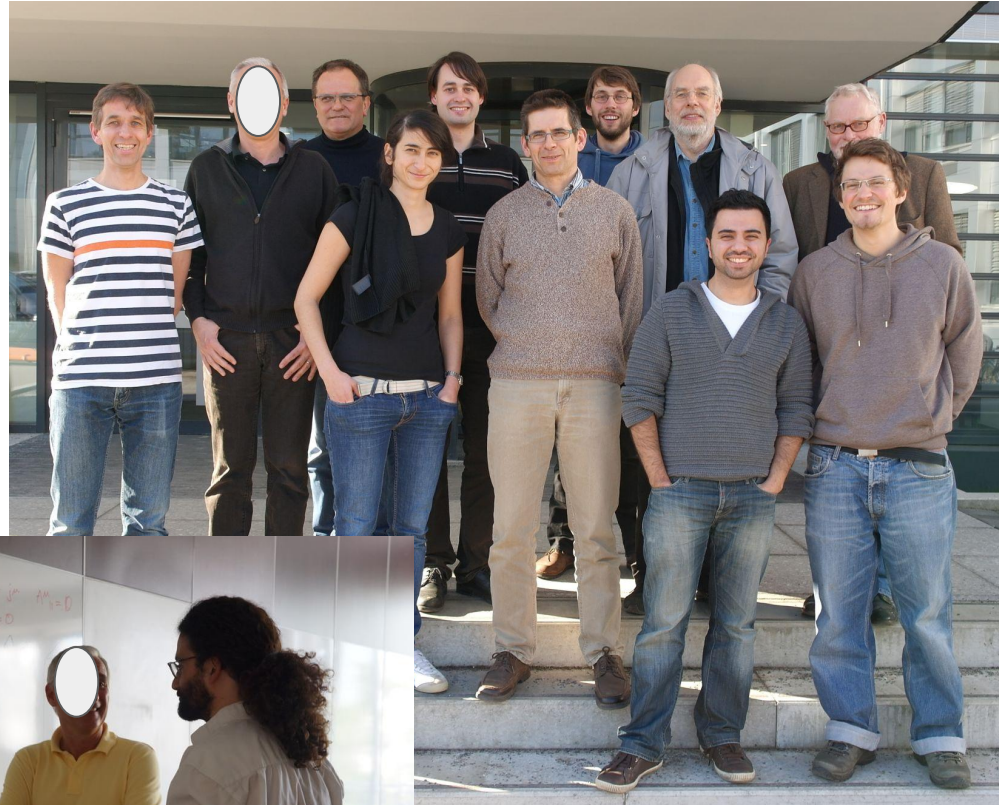
$$\mathcal{L}_{\text{QCD}} = -\frac{g_s^2}{8\pi} \theta G_{\mu\nu}^a \tilde{G}^{a\mu\nu}$$

|

$$\theta \in [-\pi, \pi]$$

Social behaviour I

- Finds comfort around “experimentalists” and “theorists”
- Effective in convincing them in following his ideas (despite the hand-writing...) cf also the other talks in this session



Social behaviour II

- Found often in sunny places
- Relation to something called the `axion': example: Axion workshop 2010



Social behaviour III - measurement in Andes/Chile

- Part of a hiking company that ventured to the "Nieves Negras" Glacier in 2017
- Involved crossing of an inconspicuous little river



Social behaviour III - measurement in Andes/Chile

- On the way back the small little river had turned into an appreciable stream!
- Eventually, the condensation of people assembled in a chain in their underwear (sic!) enabled the safe return of everyone
- Ringwald particle suspected participant of this chain (no picture available...)



Only picture from hot springs after the hike!

Social behaviour III - measurement in Andes/Chile



Citizen science

- Please have a look around you
- The Ringwald particle could be close
- Notify me in case you make a positive identification!



Summary of results - personally

- Andreas great help to make the transition (but never fully) from particle phenomenology to experimental physics:
- Great vision/dream (or ALPtraum? See r.h.s.) to go for axions/ALPs (now main-stream)
- Allowed to collaborate with many great people/friends in ALPS-II and the theory department

ALPtraum: ALP production in proton beam dump experiments

[Babette Döbrich](#) (CERN), [Joerg Jaeckel](#) (U. Heidelberg, ITP), [Felix Kahlhoefer](#) (DESY), [Andreas Ringwald](#) (DESY), [Kai Schmidt-Hoberg](#) (DESY)

Dec 9, 2015

27 pages

Published in: *JHEP* 02 (2016) 018, *JHEP* 02 (2016) 018

Published: Feb 2, 2016

e-Print: [1512.03069](#) [hep-ph]

DOI: [10.1007/JHEP02\(2016\)018](#)

Report number: CERN-PH-TH-2015-293, DESY-15-237

View in: [ADS Abstract Service](#), [CERN Document Server](#)



pdf



cite



claim



reference search



210 citations

My best wishes, Andreas

And follow the ancient wisdom:

“Mit 66 Jahren, da fängt das Leben an!”

