

Beyond the Standard Model @ CERN

Gilad Perez (CERN & Weizmann)

On behalf of the BSM group

TH Retreat, Thoiry, Nov. 9, 2012

Outline

- Introduction
- Members
- Activities
- Intro' of 2 missing new fellows
- Self intro'

BSM \Leftrightarrow High Energy Pheno'

Won't define: somewhere between experiments & pure theory, care about both. (if you are, then you know it)

Our members (you!) work on broad spectrum of topics.

Lots of info': <http://ph-dep-th.web.cern.ch/ph-dep-th/>

BSM <=> High Energy Pheno'

<http://ph-dep-th.web.cern.ch/ph-dep-th/>

The screenshot shows the homepage of the CERN Theoretical Physics division website. The header features the CERN logo and the text "THEORETICAL PHYSICS" above a grid of five scientific illustrations. Below the header, a navigation bar includes links to Google Calendar, Google Maps, inspire, arXiv, WIS dir, Webpage, CERN Phonebook, CERNTh, and xmail_Wis. A sidebar on the left contains links for TH-DIVISION, PEOPLE, SEMINARS ETC, PUBLICATIONS, COMPUTING, and OTHER. The main content area includes sections for "NEWS", "TH Institute Programs for 2012", "Safety of the LHC", and "Office Space". Each section contains a summary and a link to the full article.

NEWS

TH Institute Programs for 2012
(FRIDAY, 11 11 2011, 01:20 PM, WRITTEN BY WEBMASTER)
So far, we will host two programs in 2012, one on "Beyond the Standard Model Physics", and one on "String Phenomenology". For details see the link on the left.

Safety of the LHC
(MONDAY, 01 09 2008, 11:44 AM, WRITTEN BY WEBMASTER)
A new study of the potential risks caused by exotic particles or states of matter to be possibly produced by the LHC has recently been completed. After reviewing recent theoretical and experimental developments since earlier studies, the LHC Safety Assessment Group (LSAG), composed of J. Ellis, G. Giudice, M. Mangano, I. Tkachev and U. Wiedemann, re-iterated in the conclusions of its report (and addendum) that '*there is no basis for any concerns about the consequences of new particles or forms of matter that could possibly be produced by the LHC*'. The report relies for its black hole part on a *study* by S. Giddings and M. Mangano, to appear in Phys Rev D (for a presentation of this work, see this *talk*). The LSAG report was examined and approved by the CERN Scientific Policy Committee. A presentation of this report can be found [here](#), and a video of the talk [here](#).

Office Space
(TUESDAY, 11 11 2008, 09:46 AM, WRITTEN BY WEBMASTER)

BSM, a partial list of topics

The sidebar contains the following links:

- an CERN sem.
- organization
- workshops
- LPCC events

PUBLICATIONS

- ArXiv, FAQ
- Spires, KEK
- CERN Bulletin
- CERN library
- CERN database
- TH-preprints** (circled in red)
- catch-up

COMPUTING

- TH twiki
- general info
- visitor laptops
- CERN webmail

recent th
Safety As
Tkachev
addendum
of new p
LHC'. Th
Mangano
The LSAC
Committee
here.

BSM, a partial list of topics

Search Results - CERN Document Server 11/8/12 11:10 PM

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Search: any field Search

Search collections: Theoretical-Physics-Preprints add another collection

Sort by: latest-first desc or rank by Display results: 50 results single-list Output format: HTML brief

Theoretical Physics 1,803 records found 1 - 50 jump to record: Search took 1.11 seconds.

1. Overview of Neutrino Mixing / Altarelli, G (Rome III U.; INFN, Rome 3; CERN) We present a concise review of the recent important experimental developments on neutrino mixing (hints for sterile neutrinos, large θ_{13} , possible non maximal θ_{23} , approaching sensitivity on δ_{CP}) and their implications on models of neutrino mixing. [...] arXiv:1210.3467 ; CERN-PH-TH-2012-266 ; RM3-TH-12-15. - 2012.

Preprint Detailed record - Similar records

2. Heterotic-type II duality in twistor space / Alexandrov, Sergei (Montpellier U.) ; Pionine, Boris (CERN ; Paris, LPTHE) Heterotic string theory compactified on a K3 surface times T^2 is believed to be equivalent to type II string theory on a suitable Calabi-Yau threefold. [...] arXiv:1210.3037 ; L2C12-162 ; CERN-PH-TH-2012-259. - 2012.

Preprint Detailed record - Similar records

3. Higgs two-gluon decay and the top-quark chromomagnetic moment / Labun, Lance (Arizona U. ; CERN) ; Rafelski, Johann (Arizona U. ; CERN) We obtain the effective interaction L_{hgg} , which is driven by the fluctuations of the top quark, as a function of the top quark chromomagnetic factor K_t . [...] arXiv:1210.3150 ; CERN-PH-TH-2012-265. - 2012.

Preprint Detailed record - Similar records

4. On Limit Cycles in Supersymmetric Theories / Fortin, Jean-François (CERN ; Stanford U., ITP) ;

http://cdsweb.cern.ch/search?ln=en&p=&f=&action_search=Search&...Theoretical+Physics+Preprints&c=&sf=&so=d&rm=&r=50&sc=0&of=hb Page 1 of 11 http://cdsweb.cern.ch/search?ln=en&p=&f=&action_search=Search&...Theoretical+Physics+Preprints&c=&sf=&so=d&rm=&r=50&sc=0&of=hb Page 2 of 11 http://cdsweb.cern.ch/search?ln=en&p=&f=&action_search=Search&...Theoretical+Physics+Preprints&c=&sf=&so=d&rm=&r=50&sc=0&of=hb Page 3 of 11

Search Results - CERN Document Server 11/8/12 11:10 PM

Grinstein, Benjamin (UC, San Diego) ; Murphy, Christopher W (UC, San Diego) ; Stergiou, Andreas (UC, San Diego) Contrary to popular belief conformality does not require zero beta functions. [...] arXiv:1210.2718 ; CERN-PH-TH-2012-258 ; UCSD-PTH-12-13. - 2012.

Preprint Detailed record - Similar records

5. Equivalent D=3 Supergravity Amplitudes from Double Copies of Three-Algebra and Two-Algebra Gauge Theories / Huang, Yu-tin (Michigan U., MCTP ; UCLA) ; Johansson, Henrik (CERN ; IPHT, Saclay) We show that three-dimensional supergravity amplitudes can be obtained as double copies of either three-algebra super-Chern-Simons matter theory or that of two-algebra super-Yang-Mills theory, when either theory is organized to display the color-kinematics duality. [...] arXiv:1210.2255 ; CERN-PH-TH-2012-254 ; MCTP-12-22 ; SACLAY-IPHT-T12-076. - 2012.

Preprint Detailed record - Similar records

6. Neutrino masses and cosmological parameters from a Euclid-like survey: Markov Chain Monte Carlo forecasts including theoretical errors / Audren, Benjamin (IPT, Lausanne) ; Lesgourgues, Julien (IPT, Lausanne ; CERN) ; Annecy, LAPP ; Bird, Simeon (Princeton, Inst. Advanced Study) ; Haehnelt, Martin G (Cambridge U., KICC ; U. Cambridge, Inst. Astron.) ; Viel, Matteo (Trieste Observ. ; INFN, Trieste) We present forecasts for the accuracy of determining the parameters of a minimal cosmological model and the total neutrino mass based on combined mock data for a future Euclid-like galaxy survey and Planck. [...] arXiv:1210.2194 ; CERN-PH-TH-2012-261 ; LAPP-046-12. - 2012.

Preprint Detailed record - Similar records

7. General formula for the running of fNL / Byrnes, Christian T (CERN ; Sussex U., Astron. Ctr.) ; Gong, Jinn-Ouk (CERN) We compute the scale dependence of fNL for multi-field inflation model, allowing for an arbitrary field space metric. [...] arXiv:1210.1851 ; CERN-PH-TH-2012-249. - 2012.

Preprint Detailed record - Similar records

8. Higgs-Yukawa model in chirally-invariant lattice field theory / Bulava, John (CERN) ; Gerhold, Philipp (Humboldt U., Berlin) ; Jansen, Karl (NIC, Zeuthen) ; Källarackal, Jim (Humboldt U., Berlin) ; Knippelchild, Bastian (Taiwan, Natl. Taiwan U.) ; Lin, C-J David (Taiwan, Natl. Chiao Tung U.) ; NCTS, Hsinchu) ; Nagai, Kei-ichi (KMI, Nagoya) ; Nagy, Attila (Humboldt U., Berlin) ; NIC, Zeuthen) ; Ogawa, Kenji (Taiwan, Chung Yuan Christian U.) Non-perturbative numerical lattice studies of the Higgs-Yukawa sector of the standard model with exact chiral symmetry are reviewed. [...] arXiv:1210.1798 ; CERN-PH-TH-2012-255 ; DESY 12-162. - 2012.

Preprint Detailed record - Similar records

9. Hard four-jet production in pA collisions / Blok, Boris (Technion) ; Strikman, Mark (Penn State U.) ;

10. Precision Studies of the Higgs Golden Channel H → ZZ* → 4L Part I. Kinematic discriminants from leading order matrix elements / Avery, Paul (Florida U.) ; Boulikos, Dimitri (Florida U.) ; Chen, Minghui (Florida U.) ; Cheng, Tonguang (Florida U.) ; Drozdevskiy, Alexey (Florida U.) ; Gainer, James S (Florida U.) ; Kotrov, Andrey (Florida U.) ; Matchev, Konstantin T (Florida U.) ; Milenovic, Predrag (Florida U.) ; Mitselmakher, Guenah (Florida U.) et al. The importance of the H → ZZ* → 4L "golden" channel has recently been proven by its major role in the discovery, by the ATLAS and CMS collaborations, of an apparently Higgs-like resonance with mass near 125 GeV. [...] arXiv:1210.0896 ; CERN-PH-TH-2012-251. - 2012.

Preprint Detailed record - Similar records

11. Dark Matter in a twisted bottle / Arbe, Alexandre (Lyon Observ. ; CERN) ; Cacciapaglia, Giacomo (Lyon, IPN) ; Deandrea, Aldo (Lyon, IPN) ; Kubik, Bogna (Lyon, IPN) The real projective plane is a compact, non-orientable orbifold of Euler characteristic 1 without boundaries, which can be described as a twisted Klein bottle. [...] arXiv:1210.0784 ; LYCEN 2012-03 ; CERN-PH-TH-2012-211. - 2012.

Preprint Detailed record - Similar records

12. Anomalous Majorana Neutrino Masses from Torsional Quantum Gravity / Mavromatos, Nick E (King's Coll. London) ; CERN) ; Pilafidis, Apostolos (Manchester U.) ; CERN) The effect of quantum torsion in theories of quantum gravity is usually described by an axion-like field which couples to matter and to gravitation and radiation gauge fields. [...] arXiv:1209.6387 ; KCL-PH-TH-2012-39 ; LCTS-2012-23 ; CERN-PH-TH-2012-243 ; MAN-HEP-2012-15. - 2012.

Preprint Detailed record - Similar records

13. Generalized Skyrms in QCD and the Electroweak Sector / Ellis, John (King's Coll. London) ; Karliner, Marek (Tel Aviv U.) ; Praszalowicz, Michal (Jagiellonian U.) We discuss the stability and masses of topological solitons in QCD and strongly-interacting models of electroweak symmetry breaking with arbitrary combinations of two inequivalent Lagrangian terms of fourth order in the field spatial derivatives. [...] arXiv:1209.6430 ; KCL-PH-TH-2012-40 ; LCTS-2012-24 ; CERN-PH-TH-2012-248 ; TAUP-2958-12. - 2012.

Preprint Detailed record - Similar records

14. Merging meets matching in MC@NLO / Frederix, Rikkert (Zurich U.) ; Frixione, Stefano (CERN ; ITP, Lausanne) The next-to-leading order accuracy for MC@NLO results exclusive in J light jets is achieved if the computation is based on matrix elements that feature J and J+1 QCD partons. [...] arXiv:1209.6215 ; CERN-PH-TH-2012-247 ; ZU-TUH-21-12. - 2012.

Preprint Detailed record - Similar records

15. Secondary graviton spectra, second-order correlations and Bose-Einstein enhancement / Giovannini, Massimo (CERN) ; INFN, Milan Bicocca) Primary graviton spectra, produced via stimulated emission from an initial Bose-Einstein distribution, are enhanced for typical scales larger than the redshifted thermal wavelength. [...] arXiv:1209.3991 ; CERN-PH-TH-2012-218. - 2012.

Preprint Detailed record - Similar records

16. Dynamical mass scale and approximate scaling symmetry in the Higgs sector / Lalak, Zygmunt (CERN ; Warsaw U.) We investigate basic consequences of the assumption that the mass scale of the perturbative sector responsible for the spontaneous symmetry breaking is generated dynamically in a theory with a large UV scale. [...] arXiv:1209.3711 ; CERN-PH-TH-2012-235. - 2012.

Preprint Detailed record - Similar records

17. Hidden Negative Energies in Strongly Accelerated Universes / Sawicki, Ignacy (Heidelberg U.) ; Vikman, Alexander (CERN ; Stanford U., Phys. Dept.) We point out that theories of cosmological acceleration which have equation of state, w, such that 1+w is small but positive may still secretly violate the null energy condition. [...] arXiv:1209.2961 ; CERN-PH-TH-2012-242. - 2012.

Preprint Detailed record - Similar records

18. Metastable Charged Sparticles and the Cosmological Li7 Problem / Cyburt, Richard H (Michigan State U., JINA ; Michigan State U., NSCL) ; Ellis, John (King's Coll. London) ; CERN) ; Fields, Brian D (Illinois U., Urbana (main)) ; Luo, Feng (King's Coll. London) ; Minnesota U.) ; Olive, Keith A (Minnesota U.) ; Spanos, Vassilis C (Democritos Nucl. Res. Ctr.) We consider the effects of metastable charged sparticles on Big-Bang Nucleosynthesis (BBN), including bound-state reaction rates and chemical effects. [...] arXiv:1209.1547 ; KCL-PH-TH-2012-36 ; LCTS-2012-18 ; CERN-PH-TH-2012-223 ; UMN-TH-3117-12 ; FTPI-MINN-12-29. - 2012.

Preprint Detailed record - Similar records

19. Top anomalous magnetic moment and the two photon decay of Higgs / Labun, Lance (Arizona U. ; CERN) ; Rafelski, Johann (Arizona U. ; CERN) We consider the effect of the magnetic moment of the top quark on the Higgs $h \rightarrow \gamma\gamma$ two photon

20. Strong moduli stabilization and phenomenology / Dudas, Emilian (CERN ; Ecole Polytechnique, CPHT ; Orsay, LPT) ; Linde, Andrei (Stanford U., ITP ; Stanford U., Phys. Dept.) ; Mambrini, Yann (Orsay, LPT) ; Mustafayev, Azar (Minnesota U., Theor. Phys. Inst. ; Hawaii U., Ilio) ; Olive, Keith A (Minnesota U., Theor. Phys. Inst.) We describe the resulting phenomenology of string theory/supergravity models with strong moduli stabilization. [...] arXiv:1209.0499 ; CERN-PH-TH-2012-228 ; CPHT-RR069.0812 ; UMN-TH-3116-12 ; FTPI-MINN-12-28 ; LPT-ORSAY-12-92 ; UH-511-1199-12. - 2012.

Preprint Detailed record - Similar records

21. Testing Lorentz invariance of dark matter / Blas, Diego (CERN) ; Ivanov, Mikhail M (Moscow State U. ; Moscow, INR) ; Sibiryakov, Sergey (Moscow, INR ; Moscow State U.) We study the possibility to constrain deviations from Lorentz invariance in dark matter (DM) with cosmological observations. [...] arXiv:1209.0464 ; CERN-PH-TH-2012-234. - 2012.

Preprint Detailed record - Similar records

22. CMB photons shedding light on dark matter / Giesen, Gaelle (IPT, Lausanne) ; Lesgourgues, Julien (IPT, Lausanne) ; CERN ; Annecy, LAPP) ; Audren, Benjamin (IPT, Lausanne) ; Ali-Haïmoud, Yacine (Princeton, Inst. Advanced Study) The annihilation or decay of Dark Matter (DM) particles could affect the thermal history of the universe and leave an observable signature in Cosmic Microwave Background (CMB) anisotropies. [...] arXiv:1209.0247 ; CERN-PH-TH-2012-216 ; LAPP-038-12. - 2012.

Preprint Detailed record - Similar records

23. Testing new physics with the electron g-2 / Giudice, G F (CERN) ; Paradisi, P (CERN) ; Passera, M (INFN, Padua) We argue that the anomalous magnetic moment of the electron (a_e) can be used to probe new physics. [...] arXiv:1208.6583 ; CERN-PH-TH-2012-017. - 2012.

Preprint Detailed record - Similar records

24. Explicit Character Formulae for Positive Energy UIRs of D=4 Conformal Supersymmetry / Dobrev, V K (CERN) ; Sofiya, Inst. Nucl. Res.) This paper continues the project of constructing the character formulae for the positive energy unitary irreducible representations of the N-extended D=4 conformal superalgebras $su(2,2|N)$. [...] arXiv:1208.6250 ; CERN-PH-TH-2012-232. - 2012.

Preprint Detailed record - Similar records

25. Squaring the Magic / Cacciatori, Sergio L (Insubria U., Como ; INFN, Milan) ; Cerchiai, Bianca L (Milan U., Math. Dept. ; INFN, Milan) ; Marrani, Alessio (CERN) We construct and classify all possible Magic Squares (MS's) related to Euclidean or Lorentzian rank-3 simple Jordan algebras, both on normed division algebras and split composition algebras. [...] arXiv:1208.6155 ; CERN-PH-TH-2012-229. - 2012.

Preprint Detailed record - Similar records

26. Axion-Higgs Unification / Redi, Michele (CERN ; INFN, Florence) ; Strumia, Alessandro (Pisa U. ; INFN, Pisa ; NICPB, Tallinn) In theories with no fundamental scalars, one gauge group can become strong at a large scale Lambda and spontaneously break a global symmetry, producing the Higgs and the axion as composite pseudo-Nambu-Goldstone bosons. [...] arXiv:1208.6013 ; CERN-PH-TH-2012-233. - 2012.

Preprint Detailed record - Similar records

27. A Fast Track towards the 'Higgs' Spin and Parity / Ellis, John (King's Coll. London) ; Hwang, Dae Sung (Sejong U.) ; Sanz, Veronica (CERN ; York U., Toronto, Dept. Phys. Astron.) ; You, Tevong (King's Coll. London) ; CERN) The LHC experiments ATLAS and CMS have discovered a new boson that resembles the long-sought Higgs boson. It cannot have spin one, and has couplings to other particles that increase with their masses, but the spin and parity remain to be determined. [...] arXiv:1208.6002 ; KCL-PH-TH-2012-38 ; LCTS-2012-22 ; CERN-PH-TH-2012-226. - 2012.

Preprint Detailed record - Similar records

28. Integrable Superstrings on the Squashed Three-sphere / Orlando, Domenico (CERN) ; Uruchurtu, Linda I (Imperial Coll., London) In this note we study type IIB superstring theory on the direct product of AdS3, the squashed three-sphere and a four-torus ($AdS_3 \times S^3 \times T^4$). [...] arXiv:1208.3680 ; CERN-PH-TH-2012-224 ; IMPERIAL-TP-2012-LIU-01. - 2012.

Preprint Detailed record - Similar records

29. Suppressing Quantum Fluctuations / Vikman, Alexander (CERN) We study vacuum quantum fluctuations of simple Nambu-Goldstone bosons - derivatively coupled single scalar-field theories possessing shift-symmetry in field space. [...] arXiv:1208.3647 ; CERN-PH-TH-2012-205. - 2012.

Preprint Detailed record - Similar records

30. Vacuum Stability of Standard Model* $(+)$ / Anchordoqui, Luis A (Wisconsin U., Milwaukee) ; Antoniadis, Ignatios (CERN) ; Goldberg, Haim (Northeastern U.) ; Huang, Xing (Seoul Natl. U.) ; Lust, Dieter (Munich, Max Planck Inst. ; Munich U., ASC) ; Taylor, Tomasz R (Northeastern U.) ; Vlcek, Brian

http://cdsweb.cern.ch/search?ln=en&p=&f=&action_search=Search&...Theoretical+Physics+Preprints&c=&sf=&so=d&rm=&r=50&sc=0&of=hb Page 6 of 11

Selected topics

- Higgs pheno'
- Supersymmetry
- Composite Higgs (RS)
- Top physics
- Flavor physics
- Neutrino physics
- Collider pheno'
- ...

Our (extended) BSM group

- A student
- 13 fellows
- 5 staff
- Long term, frequent visitors, emeriti ...

BSM Student(s)



Ennio Salvioni
CERN+Padova

Last paper: Higgs Low-Energy Theorem (and its corrections) in Composite Models,
M. Gillioz, R. Grober, C. Grojean, M. Muhlleitner, E. Salvioni, arXiv:1206.7120 [hep-ph], JHEP (12).

BSM Fellows (more in the following presentations)

Auzzi, Roberto

Blanke, Monika

Delaunay, Cedric

de Sandes, Hiroshi (begins 01/2013)

de Simone, Andrea

Fortin, Jean-Francois (Jeff)

Martin, Adam

Panico, Giuliano

Paradisi, Paride

Park, Chanbeom

Rzehak, Heidi

Schmidt-Hoberg, Kai

Trott, Michael



Delaunay, Cedric:
Composite Higgs;
Flavor phys.;
top AFB.



Paradisi, Paride:
muon g-2 & Higgs;
flavor in supersymmetry;
model indep' flavor phys.



Rzehak, Heidi:
Higgs precisions;
MSSM Higgs;
QCD correction.



Trott, Michael:
Natural SUSY & Higgs;
Model indep Higgs interpretation;
Neutrino pheno'.

BSM Staff Members (more in the following presentations)

Giudice, Gian

Perez, Gilad

Rychkov, Slava

Servant, Géraldine

Wells, James



Servant, Géraldine:

Top phys.;
Top partner & collider pheno';
Astroparticle: Dark matter,
baryogenesis ...



Wells, James:

Higgs precision;
 e^+e^- colliders, CLIC;
Supersymmetry;
Top phys..

Associates, frequent visitors, emeriti (only hard core BSMers)



Guido Altarelli (Rome/CERN)



Abdelhak Djouadi (Orsay)



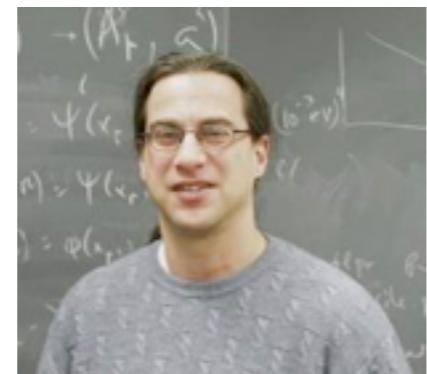
John Ellis (London/CERN)



Belen Gavela (Madrid)



Gino Isidori (Frascati)



Alex Kagan (Cincinnati)



Nazila Mahmoudi (Clermont)



Riccardo Rattazzi (Lausanne)

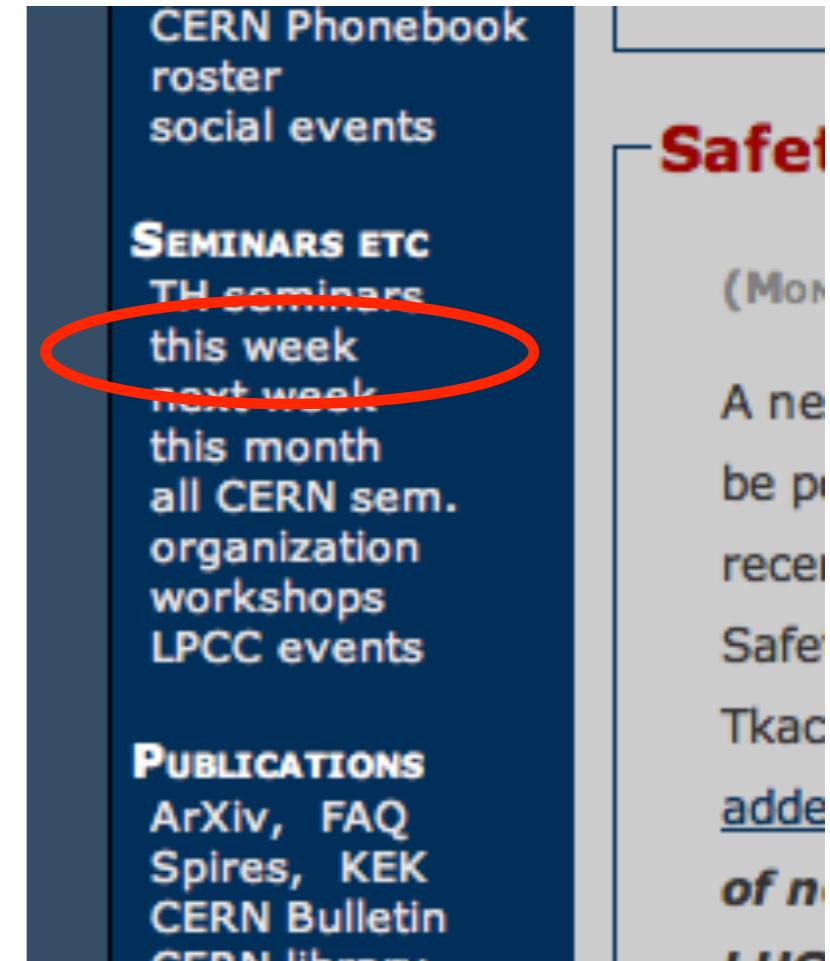
BSM Weekly Activities

Regular:

- BSM lunches: Thursdays at 12:45pm
- BSM forum: Thursdays at 2pm
- TH colloquia: Wednesdays at 2pm

Irregular:

- Particle Physics seminars: Fridays at 2pm
- Workshops, TH Institutes, Conferences...



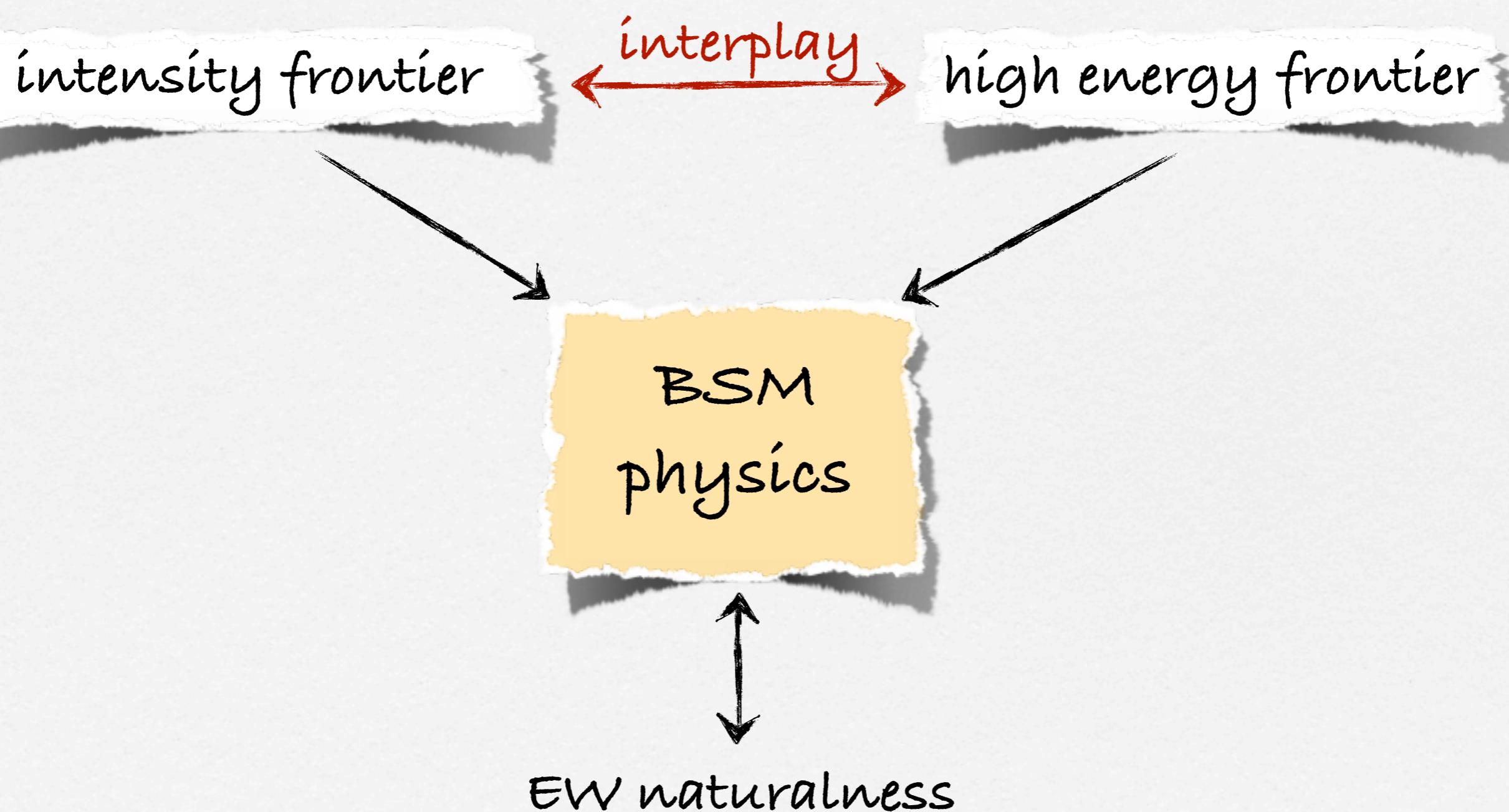
Brief: 3 x personal introduction

Hi, I am Monika!



Unfortunately I cannot be here today :-(
(@ GGI workshop in Florence)

My research in a nutshell



More in detail

intensity frontier

← interplay →

high energy frontier

- flavor signatures of specific BSM models (RS, Little Higgs, LR...)
- model-independent studies and correlations
- precision EW constraints
- BSM collider signatures
- mass measurements (kinematic edges, M_{T2})
- CP violation in heavy particle decays

Current focus

Implications of Higgs discovery

- naturalness vs. direct and indirect constraints
- models with improved naturalness
(c.f. λ -SUSY)
- ...?



Hiroshi de Sandes

PhD: 2010. IFT-UNESP, São Paulo

PostDoc: 2010-2012. IPhT, Saclay

Research Visitor: 2012. ICTP-SAIFR, São Paulo

CERN Period: 1+1 beginning 01/2013

► **Physics BSM Model Building**

► **Physics BSM Phenomenology**

Main Research Interests

- **Implications of LHC Higgs Data for Physics BSM**

- Radion Physics: Implications of LHC Higgs Searches for radion phenomenology...[w/ Rogerio Rosenfeld](#)

- **Physics BSM Model Building**

- Composite Higgs Models: A Composite 2HDM...[w/ Enrico Bertuzzo, Tirtha Ray and Carlos Savoy](#)
 - Metastable Charged Particles: An extention of the SM with gluino, Higgsino and wino-like particles without supersymmetry...[w/ Tirtha Ray and Carlos Savoy](#)

- **Colliders Searches for New Particles**

- Universal Extra Dimensions: KK modes contributions for Higgs pair production at LHC...[w/ Rogerio Rosenfeld](#)
 - Warped Extra Dimensions: Search for light custodians from Composite Higgs models at LHC...[w/ Rogerio Rosenfeld](#)

- **Current Projects**

- Spin-2 Particles at LHC [w/ Ricardo Matheus and Thiago Tomei](#), NMSSM [w/ Tirtha Ray](#) and Radion Physics [w/ Rogerio Rosenfeld](#)

- **Future Projects**

- Looking for Collaborators!

Gilad Perez

- CERN (Staff, 80%), Weizmann (20%, Assoc. Prof.);
- My next 5 papers (accidentally all within days):

R. Mahbubani, M. Papucci, GP, J. Ruderman & A. Weiler,
Light non-degenerate squarks at the LHC;

M. Field, G. Gur-Ari, D. Kosower, L. Mannelli & GP,
3-Prong Distribution for Massive QCD Jets;

A. Falkowski, M. Mangano, A. Martin, GP & J. Winter,
Data driving the top quark AFB \w lepton-based asymmetry;

Y. Grossman, A. Kagan, Z. Ligeti, GP & A. Petrov,
Constraining Absorptive CP Violation in Charm Mixing;

ATLAS: Search for Z' & Kaluza-Klein Gluons \w Had' Tops
employing the HEPTopTagger & *TopTemplateTagger* Techniques.