

Parallel Session: Top-Bottom BSM

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CPPS Center for Particle
Physics Siegen

Goals and Guidelines for the Discussions

- What **expertise** do we have in BSM physics in CPPS?
- **Who** is working on BSM aspects in CPPS?
- What kind of **topics** have been / are investigated in the recent past / at present?
- What kind of **future research plans** do exist / would make sense?
- What would be interesting **subjects for special lectures** related to the above topics (aiming at PhD students and above)?

- Search for heavy neutral leptons in $t\bar{t}$ decays
[Diptaparna Biswas, Markus Cristinziani, [Tongbin Zhao](#), ...]
- Search for charged lepton flavour violation in $t\bar{t}$ decays
[Markus Cristinziani, [Gabriel Gomes](#), ...]
- EFT fits in $t\bar{t}\gamma$ and $t\bar{t}Z$
[Carmen Diez Pardos, Ivor Fleck, [Jan Hahn](#), ...]

→ see also poster session

- BSM fits to flavour observables
[[Gilberto TX](#), Rusa Mandal, [Tom Tong](#), Tobias Huber, Alex Lenz, Martin Lang, Alexei Rusov, ...]
- Flavour structure in the SM and beyond
[[Thorsten Feldmann](#), Thomas Mannel, Rusa Mandal, ...]
- BSM models with flavour
[Rusa Mandal, [Tom Tong](#), ...]
- Simplified Models, SMEFT, BSM models for muon flavour
[Wolfgang Kilian, Nils Kreher, ...]
- Nonperturbative studies of strongly coupled QFT
[Oliver Witzel]

→ see also poster session [[Nils Kreher](#), [Martin Lang](#), [Alexei Rusov](#)]

Outline Session 1 – Thursday, 13:30 - 15:00

13:30 - 13:40 general intro [TF and MC, 10']

13:40 - 13:55 " $t\bar{t} \rightarrow$ heavy neutral leptons" [Tongbin Zhao, 15']

13:55 - 14:02 discussion of the presentation [Audience, 7']

14:02 - 14:17 " $t\bar{t} \rightarrow$ lepton flavour violation" [Gabriel Gomes, 15']

14:17 - 14:24 discussion of the presentation [Audience, 7']

14:24 - 14:39 "Search for long-lived particles in ATLAS" [Vadim Kostyukhin, 15']

14:39 - 14:46 discussion of the presentation [Audience, 7']

14:46 - 15:00 wrap-up / closing remarks for day 1

11:00 - 11:15 "Beyond the SM - Theory Intro" [Thorsten Feldmann, 15']

11:15 - 11:22 discussion of the presentation [Audience, 7']

11:22 - 11:37 "Making friends with flavour structure in BSM" [Tom Tong, 15']

11:37 - 11:44 discussion of the presentation [Audience, 7']

11:44 - 11:59 "EFT fits" [Jan Hahn, 15']

11:59 - 12:06 discussion of the presentation [Audience, 7']

12:06 - 12:21 "Interface between B meson and top physics observables" [Gilberto TX, 15']

12:21 - 12:28 discussion of the presentation [Audience, 7']
