VBSCan web site and school

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COST VBSCan

Secon in-person meeting in the second grant period

CERN, 10 – 12 February 2019

Web site

https://vbscanaction.web.cern.ch/Default.html

- We update the page regularly
- If you have any information please send it to us

School

- School director: **Senka Đurić**
- Main goals:
  - Organize the school in collaboration with ParticleFace COST
    - Theory oriented COST action
  - Two weeks school combining theory and experiment
  - End of winter / spring 2020
- Two locations for the final choice: Budapest and DESY
  - Two more in the earlier stage: Corfu and Benasque
- DESY chosen as the final location
  - Main argument: total prize about 30% lower
  - Dates: 2 - 14 March 2020
  - Organising committee: VBSCan + ParticleFace + DESY
- School format
  - Lectures (morning), hands-on tutorials (afternoon 1) and projects (afternoon 2)
  - One full and two half days free

School topics

- Monte Carlo +Theory precision + systematics
  - MC intro, merging+matching, EW corrections, fixed-order uncertainties, NNLO/NLO/LO, resummation (shower) uncertainties, hadronization (model+uncertainties), PDF uncertainties, TH uncertainties for measurements, ME (LO+NLO)
- EFT
  - existing models, comparison/translation between them, constructing EFT Lagrangian (power counting, equations of motion, Fierz, ...), renormalization and running couplings, collinear effective theory (SCET), heavy quark effective theory (HQET), EFT for dark matter, Higgs + EWK + top combined fitting
- Fitting
  - combine + morphing(?) + unfolding
- Maximum likelihood
  - ML tools, new use of ML: application to parameter estimates, applications to boosted jet identification, parton distribution functions
- Jets recostruction EXP+TH
  - boosted jets and their content, q/g discrimination, applications to CJV, fwd jets-specific reconstruction, dynamic jet veto, PU, jet grooming (soft drop), theoretical insights and calculations related to these topics, IR limit, theoretical safety
- Data interpretation
  - pseudo-observables, full BSM models
- Overview and prospects
  - prospects and status of EWK measurements and theory
- QC (quantum computing)
  - QC advantages and possible applications in HEP