

## MAD - Methodical Accelerator Design

- The MAD-X project remains the main tool for single particle dynamics and optics design at CERN
  - Long term commitment from CERN, ~35 years starting from MAD8.
  - Provides an interface to PTC/FPP library from E. Forest, KEK.
- New development done for HL-LHC and FCC-ee needs:
  - Tilted solenoids.
  - Separating the dipole strength from its bending angle.
  - Radiation updated and checked vs MAD8 and LEP.
  - Tapering of lattice to compensate for the energy loss due to radiation and checked vs SAD.
- MAD-NG (Next Generation) is being developed in parallel to provide PTC-like physics (GTPSA) and more flexibility (JIT).
- If you are interested in contributing, testing, or new features, please contact us at [mad@cern.ch](mailto:mad@cern.ch), consult <http://cern.ch/mad>, or look at <https://github.com/MethodicalAcceleratorDesign>.

*Slide presented in the EIC workshop Oct 2020 by Laurent and Tobias and previously discussed in the HSS section meeting.*



## This review

- First MAD-NG user experience with CERN present and future machines
- Goals:
  - Collect first user impressions
  - Compare MAD-X/PTC to MAD-NG
  - Identify the potential of MAD-NG, shortcomings and risks