

News

- Publication plan of individual papers discussed with the CEPC management on [5.20](#) and [5.27](#)
- Some requirements from the management:
 1. Content should not conflict with the TDR and should represent substantive extensions of the TDR, rather than simple duplication.
 2. Ensure that the CEPC TDR is appropriately cited.
 3. Include *Henan Center for High Energy Physics* as an affiliation where applicable.
 4. Cross-reference with all ongoing and planned CEPC papers should be checked to align with the publication plan across all CEPC working groups.
 5. All physics and performance papers should be based on the Reference Detector TDR. Comparisons with other detector concepts are encouraged.
- It's suggested to form a publication committee to help ensure smooth publications of CEPC-related papers
 - Regular update of the plan and check on the status
 - A presentation at the Wednesday meeting before submitting a paper

Pub Plan in Performance Group

H	1	Optimisation of the vertex detector and measurement of Higgs decays to second-generation quarks at the CEPC	H. Yang, M. Ruan, et al	JHEP 03 (2026) 141	Published in 2026	Vertex + Performance, based on Ref-TDR with delphes; Evaluation of performance with different vertex designs, number of layers, etc.
H	2	Hadronic Decay Branching Ratio Measurements of the Higgs Boson at Future Colliders Using the Holistic Approach	Y. Zhu, M. Ruan, et al	HiHEP 2026, 2 (1), 5	Published in 2026	further development of ML@CEPC
t	3	Precision measurement of the WW fusion cross section at $\sqrt{s} = 360$ GeV at the CEPC	Y Hou, T Yu, H Liao	EPJST(2026)	Published in 2026	analysis not in TDR, but based on RefTDR full sim
B S M	4	Search for Long-lived Particles at Future Lepton Colliders Using Deep Learning Techniques	X Chen, L Li	FOP 2026, 21(5)	Published in 2026	Analysis in TDR, but paper finished before TDR, and based on CDR baseline detector; not much difference. Muon+ECAL+HCAL+Performance;
t	5	Exploring the tt threshold at an electron-positron collider	L Li, Y Lin, X Sun	Submitted to PRD	in review	Analysis in TDR , futher optimized
Z	6	Prospect for measurement of CP-violating parameters of $B_s^0 \rightarrow \phi\gamma$ at the Tera Z factory	S Chen, H Wang, M Ruan	Submitted to JHEP	refrees' comments replied	still based on CDR detector; plan to add discussion and brief evaluation on the sensitivities with RefTDR detetor,
H	7	Deep-learning jet flavor tagging for precision hadronic Higgs measurements at future e+e- Higgs factories	M. Ruan, H. Yang, et al	JHEP	submitted to arxiv	new version based on RefTDR with Delphes according to referees' request

Pub Plan in Performance Group

H	8	Higgs Recoil mass at CEPC	Y Li, C Zhang	TBD	Draft in 4 m submission in 5 m	Analysis in TDR ; missing Z(ee)H channel, evaluating the potential to add Z(ee)H channel
Z	9	Simultaneously constrain R _b , R _c and R _q with future lepton collider at Z pole	B Liu, Z Liang (TBD)	TBD	submit by end of this year	Analysis in TDR: related to vertex tagging perf, need to better evaluate systematic uncertainties and beam background
H	10	Search for Higgs boson invisible decays at the CEPC	G Liu, M Chen	TBD (CPC?)	Draft in 4 m; submission in 5 m	Analysis in TDR, plan to add NN based analysis and JOI jet flavor tagger to improve further sensitivities
Z	11	Measurements of Forward–Backward Asymmetry at the CEPC with the TDR Reference Detector	M Li, S Han	EPJS or CPC	submit by end of this year	AFB (mu) Analysis in TDR, and needed for Master degree. Plan to also include Z->ss, bb, cc.
Z	12	Prospect for direct time-dependent CP violation searches at a future Z factory	S Chen, Z Yang	TBD	~1 year	extension of RefTDR analysis, fesibility study with toy
B S M	13	Prospects for smuon pair production in the future e–e+ Higgs factories	X Zhuang, F Lyu, D Xu	TBD	~2 years	Analysis in TDR, but need reproduce samples due to very tight filters before + lack of manpower curently
H	14	Photon Performance with the CEPC reference detector	Reda, Joao, Fangyi, Yang	TBD	TBD	Analysis in TDR, suggested to be included in a ECAL/photon performance paper

Pub Plan in Performance Group

t	15	Precision Determination of Top-Quark Electroweak Couplings at the CEPC	M Biyabi, Gang Li, H Liao, et al	EPJC	Draft ready; submission in 3 m	
H	16	Study of electron Yukawa coupling at CEPC	S Feng, G Li, H Liao	EPJC	Winter	Needed for Master Degree
W	17	CKM matrix measurement with $e^+e^- \rightarrow W^+W^-$	Zhang Z, Li G, et al	EPJC	drafting, 4 months	
Z	19	Measuring AFB with Z to hadrons	Liao L, Li G, et al	EPJC	drafting, 4 months	AFB(bcs), also measure $\sin^2\theta_W$, and take into account the longitudinal polarization. Might be merged with above item 14.
H	19	Measurements of CP Properties in $H \rightarrow gg$ Decays at the CEPC with the TDR Reference Detector	M Li, Y Zhu, S Han	TBD	submit by end of this year	this is a subtopic within a long-term quantum simulation project
Z	20	Measurement of the Z-Boson Width at the CEPC Using Transverse Polarization with the TDR Reference Detector	M Li, S Han, G Li	TBD	TBD	Proof of principle studies still ongoing
H	21	Search for $H \rightarrow ss$	Y Huang, M Ruan, H Yang	TBD	2027	plan to combine multi channels